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THE

EDINBURGH
MEDICAL AND SURGICAL
JOURNAL:

EXHIBITING

A CONCISE VIEW

OF THE LATEST AND MOST IMPORTANT

DISCOVERIES IN MEDICINE, SURGERY, AND PHARMACY.

1805.

SECOND EDITION.

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THE

EDINBURGH
MEDICAL AND SURGICAL
JOURNAL:

1. JANUARY 1805.

No. I.

ADVERTISEMENT.

In preſenting a New Periodical Work to the attention of the Medical Profeſſion, the Editors think it neceſſary to ſay a few words in explanation of their deſign.

Their object is the improvement of Medicine, by collecting the ſcattered hints, and regiſtering the important facts connected with Medical Literature and Medical Practice. A ſlight acquaintance with the healing art will ſhew how extenſive and intereſting a field is yet unexplored, and how many advantages ſtill remain unimproved. Such improvements and inquiries can only be ſucceſsfully made by the united efforts of many. To connect theſe, to render them immediately uſeful, nothing ſeems preferable to the plan of a periodical publication—nothing ſeems ſo well calculated to promote extenſive and general good, by circulating uſeful information, by bringing into public notice intereſting tracts and caſual hints and obſervations, which, being deemed too ſhort for ſeparate publication, might lye many years concealed, or perhaps irrecoverably periſh, by collecting, from ſources not purely medical, facts and obſervations connected with Medicine, and by diffuſing the knowledge of Medical Literature.

The cuſtom of declaiming againſt the multitude of ſimilar publications is unreaſonable. Their very exiſtence is a proof that their utility is felt and acknowledged. Their extenſive circulation, and the communications which ſupport them, depend entirely on the approbation of the public. Examples might be adduced of works of this deſcription, which have deſervedly acquired a very great degree of reputation; and it is preſumed that the Profeſſion at large will be ready to accept, and to contribute freſh information of the ſame kind. All ſuch periodical works, from the very nature and origin of them, have their periods of vigour and decay. They flouriſh, and they fade. They terminate abruptly; or, after reaching a reſpectable old age, they are ſuſpended. New ones ariſe. Their powers are rapidly developed. The novelty of their views, the originality of their execution, every thing tends to render their commencement intereſting and energetic. A New Work of this kind, therefore, if properly conducted, cannot fail to be favourable to the beſt intereſts of Medical Science.

Since the plan of the EDINBURGH MEDICAL AND SURGICAL JOURNAL was firſt announced, a circumſtance has occurred which has greatly increaſed the probability of its accompliſhing all that was expected from it. A work, whoſe objects were in many reſpects ſimilar, had been projected by ſeveral gentlemen connected with the public Medical Inſtitutions of London, and eminently qualified to execute what they had planned. In conſequence of the arrangements previouſly made in Edinburgh, it has been relinquiſhed; and a combination has ſuperſeded a competition for public patronage. The original title has been retained, merely to diſtinguiſh this Journal from ſimilar publications, although communications from every quarter are requeſted; but the names of the oſtenſible editors formerly announced are now withdrawn, becauſe they are in future to be conſidered only as members of an extenſive Aſſociation, reſident partly in LONDON, and partly in EDINBURGH. By thus connecting theſe two diſtinguiſhed Medical Schools, it ſeems reaſonable to expect that ſufficient materials may be collected to render each number not only an agreeable relaxation from the cares and fatigues of actual practice, but alſo the vehicle of uſeful information on every branch of the Profeſſion, while at the ſame time an opportunity will be afforded to all who are actuated by a zeal for the diffuſion of knowledge, to record caſes of difficulty and danger, to ſubmit doubtful opinions to the ſtrict teſt of enlarged experience and mature examination, and to add to the general ſtock of Medical information.

The arrangement which ſeems beſt adapted for accompliſhing theſe objects, is to publiſh a Number every three months, and to divide each Number into three parts; to appropriate the firſt to *Original Communications;* the ſecond to the *Critical Analyſis of Medical Publications;* and the laſt to *Miſcellaneous Intelligence on Medical Subjects.*

Under the *firſt diviſion*, will be included Medical and Surgical hiſtories and reflections—Diſcoveries in Anatomy, human, comparative, and morbid—Eſſays on intereſting points of Phyſiology—Pathological obſervations—Remarks on well authenticated facts of Natural Hiſtory and Chemiſtry, on ſubjects immediately connected with the cauſes and treatment of diſeaſes, and the improvement of Pharmacy. And the Editors requeſt their correſpondents to direct their particular attention to the following inquiries:—To inveſtigate the origin of diſeaſes, to trace their changes and analogies, and to eſtimate the comparative advantages of different modes of treatment—To deſcribe epidemic and endemic diſeaſes in every part of the world—To obſerve all thoſe circumſtances which conſtitute Medical Topography—To inveſtigate the effects of trades, manufactures and profeſſions, on the health of thoſe who exerciſe them—To ſtudy comparative pathology, and the diſeaſes of the lower animals—

To analyſe and record the different morbid appearances in the ſolid and fluid parts of animal bodies—To cultivate Medical Surgery—To improve the operations of Surgery, and to ſimplify its apparatus—To aſcertain the effects of medicines on the ſeveral functions of the body, both in the ſtate of health, and under various circumſtances of diſeaſe—To examine the changes produced in their properties by various combinations, and the different preparations to which they are commonly ſubjected—To improve the proceſſes of Pharmacy—To point out the application of the ſcience of Medicine to the preſervation of public health, and to the adminiſtration of juſtice—To record the caſes in which medical opinions have influenced the latter, and to deſcribe the meaſures adopted by the magiſtracy for ſecuring the former—To indicate the means of ſupplying the poor moſt effectually with medical aſſiſtance, and of increaſing the advantages derived from hoſpitals and diſpenſaries, by ſuggeſting improvements in their conſtruction and management—To propoſe regulations for ſuppreſſing quackery, and every other circumſtance which may tend to diminiſh the utility and reſpectability of the Medical Profeſſion ;—In ſhort, to examine every ſubject connected in any degree with the Philoſophy of Medicine, which may make diſeaſes the objects of rational inquiry and ſatisfactory explanation, and render our treatment of them active and correct, and to promote every inveſtigation which may have any tendency to increaſe the advantages which the State derives from the ſcience of Medicine.

In order to render this publication more varied and uſeful, and to prevent the admiſſion of original communications of no merit, or foreign to the plan, the *ſecond part* will be devoted to a Critical Analyſis of the moſt important recent Medical Publications, both foreign and domeſtic. In the former department of this work, the Authors alone muſt be reſponſible for whatever is contained in their reſpective communications, while all that can be required of the Editors is judgement and impartiality in ſelection. In the preſent, however, the duties of editorſhip are ſo laborious, the reſponſibility ſo great, and its importance ſo undervalued, that nothing but an ardent zeal for the promotion of Medical Science could induce them to dedicate to the account of Medical Literature any portion of their work, which might be ſo much more eaſily filled up by being leſs ſcrupulous in their choice of original communications. But the principal object of the Editors is utility; and they do not conceive that their exertions can be more uſefully employed, than in giving an early and ſummary account of the publications connected with Medicine. Theſe are however, ſo numerous, and their merits ſo various, that it would be improper to pay the ſame attention to all. In ſelecting a part for detailed analyſis, the Editors will be chiefly regulated by the importance of the ſubject, the excellence of the manner in which it is treated, and the rarity or expence of the work; and it is their wiſh rather to bring into notice real improvements, and to encourage diffident abilities, than to diſcover imperfections, and to expoſe errors. Theſe, however, when ſanctioned by high authority, and advanced with impoſing confidence, it is the duty of the Editors to ſupply or correct; and, by thus combining judicious analyſis with independent criticiſm, they hope to be able to render this department of their undertaking frequently intereſting and original, always uſeful and inſtructive.

The *third part* will be devoted to Medical News, Extracts from Correſpondence, and Miſcellaneous Intelligence on ſubjects connected with Medicine and Surgery. By means of an extenſive correſpondence, this portion of the Journal may be rendered extremely intereſting. It may be the means of conveying the earlieſt information of important diſcoveries; of preſerving obſervations and facts, which the authors themſelves have not leiſure to arrange or complete into regular eſſays; of conveying an account of the general ſtate of health, by quarterly reports from hoſpitals, diſpenſaries, and extenſive private practice; of ſubmitting doubtful opinions, propoſals, and queſtions, for candid and liberal diſcuſſion; in ſhort, of directing the attention of the Profeſſion at large to many intereſting particulars, which might otherwiſe remain unnoticed.

The Editors enter upon this undertaking, actuated by a ſpirit of improvement, and a pure ſimple love of truth, free from partiality for any particular ſect or ſyſtem. They wiſh Medicine to be cultivated as a branch of natural hiſtory, and to be ſo improved. They wiſh diſcoveries to be made; that facts of all tendencies be publiſhed; that no hints ſhould be ſuppreſſed, which may point out the tract of uſeful inveſtigation, and may lead to uſeful concluſions.

THE

EDINBURGH

MEDICAL AND SURGICAL JOURNAL.

PART I.

ORIGINAL COMMUNICATIONS.

I.

Hiſtory of Three Caſes of Erythema Mercuriale, with Obſervations.

By Thomas Spens, M. D. Preſident of the Royal College of Phyſicians, and Phyſician to the Royal Infirmary of Edinburgh.

An affection of the ſkin, of a particular nature, attended with pyrexia, and coming on during the uſe of mercury, is, I believe, by no means an unfrequent occurrence. In the courſe of my practice in the Royal Infirmary, I have met with five caſes of this kind ſince the month of April 1803. But although the ſame diſeaſe muſt have fallen under the obſervation of other practitioners, no hiſtory of it, ſo far as I know, has yet been publiſhed. * This is the more ſurpriſing, as the ſymptoms attending it are marked with ſtriking peculiarities, are often of long continuance and highly diſtreſſing, and ſometimes even ſo bad as to terminate fatally.

In all the caſes above mentioned, the patients had been expoſed to cold, while the conſtitution was affected by mercury. Three of them were admitted with the diſeaſe upon them; and, in the other two, it came on while the patients were uſing mercury in the common wards of the Infirmary, which are not well adapted for the exhibition of that medicine: but the great number of patients who apply for admiſſion, whoſe caſes require mercury, and who cannot otherwiſe be cured, leaves no alternative.

The journals of two of theſe caſes have been loſt; but they, as well as that of Ann Harper, were comparatively ſlight, and of ſhort duration. The other two were very remarkable; and I ſhall now proceed

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* Since the account of theſe caſes was drawn up, two publications on this diſeaſe have appeared, by Dr Moriarty and Mr Alley of Dublin.

proceed to give as diſtinct an account as I can of the three which have been preſerved. But, though neceſſarily long, it is by no means ſo complete as I could have wiſhed; as, in the firſt caſe, which was the only one I had an opportunity of obſerving from the beginning, the diſeaſe had made conſiderable progreſs before I was aware of the peculiarity of its nature.

CASE I.

JOHN DONALDSON, a ſhoemaker, a ſtout young man of 23 years of age, was admitted into the Royal Infirmary on the 19th of March 1803, with a large bubo in his right groin, in which there was a ſlight ſenſe of fluctuation. He had as yet taken no mercury, and was immediately put upon a courſe of the common ointment and pill, which, with the interruption of two days only, on account of pretty ſevere catarrhal ſymptoms, he continued until the 14th of April, by which time his mouth was conſiderably affected.

About eight or ten days after this, he began to complain of his groins and thighs being very itchy and painful, and of an eruption on his thighs. A bubo had alſo appeared in his left groin, which, as well as that in the right, had ſuppurated. They were both ſtill open, but the ſores which remained were inconſiderable. I imagined, therefore, that his diſtreſs was occaſioned by a crop of puſtules, ſo often the conſequence of mercurial frictions, and did not at firſt examine the parts, but only recommended to him to change the place of rubbing.

On the 26th of April, he was feveriſh and very uneaſy; and the pain and itchineſs of his thighs and groins continuing very diſtreſſing, I examined them, and found a very copious red eruption, and general erythema, all over his thighs. The eruption was ſlightly elevated above the ſkin, and ſomewhat rough to the touch. It extended pretty generally over the lower extremities, and had alſo appeared on his arms and hands. In ſome places ſmall veſicles were obſerved.

The Mercurial Medicines were ſtopped, a Saline Mixture was preſcribed, and he was directed to take a tea ſpoonful of Sublimed Sulphur, morning and evening, as his belly was rather ſlow.

April 28. The erythema has extended over his arms, and the eruption over the greater part of his body. An exudation, of a ſerous, yellowiſh fluid, has alſo taken place, particularly from the inſide of his thighs, groins, and contiguous parts, which, when dry, ſtiffens his linen.

In a few days the erythema had extended over his whole ſkin, which was every where very painful, ſomewhat ſwelled, and moſt diſtreſſingly itchy, attended with conſiderable deſquamation of the cuticle. The exudation became more general, frequent and copious; the ſmell which iſſued from him was peculiar, and very offenſive. He was much debilitated. Pulſe 120, and rather feeble. He had almoſt entirely loſt his appetite, and was very thirſty; but his tongue was clean and moiſt, and continued ſo during the whole courſe of the diſeaſe.

A weak ſolution of Acetite of Lead was applied to his groins, and to the inſide of his thighs, and the Unguentum Sulphuris to his arms; but neither of them being productive of any benefit, they were ſoon diſcontinued. The warm bath was twice tried, and he felt it very agreeable; but the relief it afforded being only temporary, it having nearly induced ſyncope, and the bath being ſituated in a diſtant part of the houſe, it was not repeated.

May 4. He was ordered half a drachm of the powder of Cinchona four times a day, drink acidulated with Sulphuric Acid, and a bottle of Scotch porter daily.

—— 5. He has been troubled with diarrhœa ſince yeſterday, but feels rather eaſier. Pulſe 100. Conſiderable thirſt. The cuticle begins to come off in large portions. The diſcharge is attended with a moſt unpleaſant and peculiar odour. The trunk of his body, and extremities, but particularly his feet, are conſiderably ſwelled, and he complains of ſoreneſs and of a ſenſe of ſwelling in his mouth.

The ſulphur and acidulated drink were omitted. He was directed to take half a drachm of powder of Cinchona, to which ſix drops of Tincture of Opium were added, ſix times a day; and he got a draught with thirty drops of Tincture of Opium at bed-time.

—— 6. The exudation was more general and copious laſt night than it has yet been, attended with much itching. The ſwelling of the integuments of the body and extremities continues. Pulſe 100. Diarrhœa has not returned. Thirſt abated, but the ſmell from the diſcharge has become ſtill more offenſive, and he is frequently troubled with nauſea.

The ſame treatment was continued, except that the Tincture of Opium was not added to the Cinchona; and he was allowed ten ounces of Toddy (Aq. Cardiaca *) daily.

—— 7. Swelling of the face ſo conſiderable this morning when he awoke, as nearly to cloſe his eyes. The cuticle is falling

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* Aq. Cardiac. *Noſoc. Edin.*
℞ Alcoholis diluti ℥ xxvi.
Aquæ Fontanæ ℔ iv.
Sacch. purif. ℥ iij ſs. M.

ing off in portions of very conſiderable ſize, eſpecially from his hands. His feet are ſtill more ſwelled, and of a deeper red colour. He feels ſtill more uneaſy to-day, and the ſmell is more diſagreeable. Pulſe 96, but varies to 120.

Inſtead of the powder of Cinchona, he was directed to take an ounce of the Aromatic Mixture of Cinchona * every ſecond hour, and his toddy was increaſed to a pint daily.

May 8. The erythema continues almoſt general, the pain and itchineſs very diſtreſſing, the exudations very profuſe, and the fœtor exceedingly offenſive. The lips and eyelids are more ſwelled, and the tarſi and eyes are conſiderably inflamed. Pulſe 112. He is ſtill very weak; but has had a pretty good night, and feels ſome return of appetite. His medicines were ordered to be repeated, and a decoction of Galls to be applied to ſome parts of his ſkin with a ſponge. He alſo got a weak ſolution of Acetite of Lead as a collyrium.

—— 9. The aſtringent decoction at firſt leſſened the pain and itchineſs; but he ſoon thought that it rather increaſed his uneaſineſs, and I believe the uſe of it was ſoon laid aſide. The exudation which had taken place on the fore part of his breaſt, belly, and extremities, is alſo coming from his face to-day, which is more ſwelled; and there is conſiderable deſquamation from his ſhoulders and back.

—— 10. Continues in great diſtreſs. Pulſe varies from 100 to 120. Copious exudation from the breaſt. Conſiderable deſquamation from the face.

He was allowed twelve ounces of Port Wine inſtead of the Toddy.

—— 11. Continues nearly in the ſame ſtate. Exudation very general. Deſquamation begins to extend to the hairy ſcalp.

His medicines were continued; but he was directed to get forty drops of Tincture of Opium in his evening draught, and his allowance of Port wine was increaſed to twenty ounces. He was alſo deſired to take a tea ſpoonful of Sulphuric Acid Mixture † in a glaſs of water, when thirſty.

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* Miſt. Cinchonæ aromatica *Noſoc. Edin.*
℞ Pulv. Cort. Cinchonæ ℥ ſs.
Mucilag. Mimos. Nilot. ℥ ij.
Tere et paulatim adde,
Aquæ Fontanæ ℥ v.
Tincturæ Lauri Caſſiæ ℥ i.

† Miſt. Acidi Sulphurici *Noſoc. Edin.*
℞ Acidi Sulphurici diluti ℥ ij.
Syrupi communis ℥ vi. M.

May 12. He has had a tolerable night, and feels eaſy at preſent. Belly regular. Appetite improving. His medicines were continued; and he was ordered an increaſed allowance of bread, and two pounds of beef-tea daily.

—— 13. His back is very itchy at preſent, and he ſays this ſymptom uſually precedes the exudations, which, however, have been rather leſs frequent for ſeveral days; but his ſkin continues very painful, the fœtor very ſtrong, and large portions of the cuticle are falling off. He is ſtill occaſionally diſtreſſed with nauſea. Pulſe 112.

—— 15. Some ſwelling was obſervable laſt night in many places where the cuticle had peeled off. The newly formed cuticle cracked during the night, and a conſiderable exudation ſucceeded. His eyes are ſtill inflamed, and very ſenſible to light. His feet are leſs ſwelled. Complains much of thirſt, and frequent ſickneſs at ſtomach. Pulſe from 112 to 120, and he is very uneaſy.

—— 17. Exudation diminiſhed; but his ſkin is ſtill very painful, and his feet and hands much ſwelled. Belly rather looſe. Pulſe 112. Appetite tolerable.

—— 19. He has had a more reſtleſs night, and the exudation has again become more profuſe. Belly looſe. Appetite good.

His medicines were continued, and he was ordered to take an ounce of Infuſion of Catechu after every looſe ſtool.

—— 21. Exudation very profuſe. Belly ſtill looſe.

—— 22. He has been very uneaſy ſince yeſterday. The ſwelling of his hands is nearly gone; that of his feet continues; and the newly formed cuticle is coming off the lower extremities in pretty large portions. Pulſe 120, and weak. Much thirſt. Appetite tolerable. Belly regular,

—— 23. The exudation has become leſs, and he is conſiderably eaſier. Pulſe 108, and firmer.

—— 25. Skin has become more painful, and the exudation more conſiderable. Has had ſome catarrhal ſymptoms for theſe two laſt days. Conſiderable thirſt. Belly regular. Pulſe 112.

—— 27. Exudation much diminiſhed. Cough leſs troubleſome.

—— 30. Exudation nearly gone, except from the back of his head; but his ſkin is ſtill itchy, and very painful, eſpecially when he moves: he ſays, that it feels as if 'his fleſh was cracking in pieces.' His eyes continue painful, and the bark mixture produces nauſea. Pulſe varies from 100 to 120. Tongue clean. Belly regular.

His medicines were continued, with the exception of the Bark Mixture.

May 31. Skin more painful. Still loathes the bark mixture; but he was deſired to take as much of it as his ſtomach would bear. Pulſe 120.

June 2. Eyes rather better. There has been ſome exudation for the laſt two days, with reſtleſs nights and frequent nauſea. Pulſe 116. Belly regular.

Medicines continued; but the Tincture of Opium in his evening draught increaſed to fifty drops.

—— 3. Had a good night. Leſs pain and itchineſs of ſkin to-day, but ſome exudation. Pulſe 110. Appetite good.

—— 4. Some fluſhing of his face, and increaſed redneſs of the trunk and extremities. Some exudation from different parts. Pulſe 110, and ſtrong.

—— 5. Has had a ſleepleſs night. Face ſtill fluſhed, and eyes again more painful, with ſwollen inverted tarſi. Redneſs of his trunk and extremities, pain and itchineſs, diminiſhed. Exudation more general; and there is a diſcharge of purulent matter from his hams. Pulſe 120. Much thirſt. Appetite good.

—— 7. Exudation chiefly from his back. Pulſe 106. Belly rather ſlow. Much thirſt.

—— 8. The ſtate of his ſkin ſtill occaſions conſiderable uneaſineſs; and there is ſome exudation from the back of his head, from which the hair is falling off.

The Cinchona mixture was diſcontinued. The other medicines were repeated, but the quantity of his wine was diminiſhed to a pound daily. The Linim. Aq. Calcis was ordered to be rubbed on his thighs, and he was deſired to take one Mercurial Pill every morning and evening.

—— 9. Feels much relief from the uſe of the Liniment. Is in general much eaſier, and had a tolerable night.

The ſame treatment was continued, except that the Liniment was directed to be applied to his whole body.

—— 10. Has had a quiet night, though without much ſleep. Pulſe 100. Appetite good. Belly regular. There are two ſmall tumours, one on the left breaſt towards the ſternum, the other on the lumbar region of the ſame ſide, which ſeem to contain a fluid, and are of a darker colour than the reſt of the ſkin, but are very little painful; and to which a common poultice was applied.

—— 11. Still feels much relief from the application of the Liniment. His ſkin is much better, the itchineſs much leſs troubleſome, and the ſmell much leſs offenſive. Pulſe 104. Belly regular.

—— 12. Was rather reſtleſs during the night; but his ſkin continues eaſier. Since laſt viſit, has had at times partial fluſhings of his face, and temporary ſenſations of heat in different parts of his body, which went off with very ſlight exudation. Pulſe 88, and firm. Has ſo far recovered as to be able to feed himſelf, which, from the pain occaſioned by motion, he had been incapable of for a long time. Belly ſomewhat griped.

June 15. His ſkin in general has now aſſumed a much more natural appearance; but his face is at preſent conſiderably fluſhed, and he complains of ſlight headach, and of general reſtleſſneſs. Pulſe 120. Tongue clean, but rather dry. Thirſt conſiderable. Belly regular. Appetite good.

—— 16. Is much eaſier to-day. Pulſe 100. Tongue clean and moiſt.

—— 17. Has at times felt a conſiderable degree of itchineſs on the inſide of his thighs; and his gums are ſlightly affected.

Medicines continued; but he was deſired to take only one Mercurial Pill daily.

—— 20. Pulſe 104, and firm. Continues better, and regains ſtrength. Skin ſtill itchy at times, but continues much leſs painful. Appetite good.

—— 22. The tumours on his ſide ſuppurated, and are now quite healed.

The Mercurial Pills were diſcontinued altogether. His other medicines were repeated.

—— 25. His ſkin continues much cleaner, and leſs itchy and leſs painful; but his face is ſtill ſomewhat ſwelled, and his eyes tender. Pulſe 90. Finds himſelf much ſtronger.

—— 28. His medicines and wine were continued, and he was deſired to take half a drachm of powder of Cinchona ſix times a day.

July 4. Skin, in moſt places, appears to be in a healthy ſtate; but his feet are very tender. Has ſtill occaſional attacks of itchineſs, which are only ſucceeded by fluſhing, and a ſenſation of heat.

The Cinchona powder was diminiſhed to half a drachm four times a day, the Wine to ten ounces daily, and the Tincture of Opium in his evening draught to thirty-five drops. He was alſo ordered twenty drops of Antimonial Wine three times a day.

—— 7. The Cinchona and Wine were diſcontinued; and he was ordered to have a bit of beef daily to dinner.

The ſoles of his feet continued ſo tender for many weeks, that he could hardly put them to the ground; on which account, he remained in the Hoſpital for a conſiderable time after he was quite well in every other reſpect.

CASE 2.

ANN HARPER, a ſerjeant's wife, about 36 years of age, was admitted into the Royal Infirmary on the 18th of Auguſt 1803. The account ſhe gave of herſelf was, that about three weeks before, the whole ſurface of her body had become hot and itchy, with ſwelling and inflammation of the integuments, moſt conſiderable on the face and eyelids. Theſe ſymptoms were preceded and accompanied with alternate cold and hot fits, languor, proſtration of ſtrength, loſs of appetite, thirſt and watchfulneſs. She continued in this ſtate for fourteen days, when a ſcarlet eruption appeared over the whole cuticle; particularly on the inſide of her arms, thighs, and legs; attended with an exudation, which was greateſt from the groins and thighs, and with a diſagreeable ſmell. In a few days the eruption became dry and white; and afterwards, the cuticle peeling off, and leaving the cutis vera itchy and tender, the new cuticle became affected in the ſame way as the former.

The febrile ſymptoms ſtill continue. Pulſe 118. Tongue white. Thirſty. Belly and Catam. regular.

Three days before ſhe was taken ill, ſhe had rubbed in a ſmall quantity of mercurial ointment on her groins, and upon ſome hæmorrhoidal tumours. On the fourth day ſhe felt her groins ſomewhat painful, and was the ſame day expoſed to cold and moiſture, immediately after which her complaints came on.

She was directed to apply lime water to one ſide, and the Liniment. Aq. Calc. to the other; and to take half a drachm of powder of Cinchona four times a day, and drink acidulated with Sulphuric Acid.

Aug. 19. There has been leſs exudation, but her ſkin is ſtill hot, and the ſmell from her thighs and groins, the parts moſt affected, is very diſagreeable. Pulſe 112. Belly ſlow. Complains much of want of ſleep. She got a bolus compoſed of half a drachm of Lenitive Electuary, and a drachm of Sublimed Sulphur; and a draught was ordered at night, with twenty-five drops of Tincture of Opium, and thirty drops of Antimonial Wine.

—— 20. Slept well. Belly regular. Exudation from the groins and thighs diminiſhed. Appetite improved. Thirſt ſomewhat abated. Tongue clean. Pulſe 100.

—— 29. Eruption has been going off for ſome days paſt, and her ſkin is now every where dry. Conſiderable œdema of lower extremities. Febrile ſymptoms nearly gone. Belly regular. She was deſired to take a drachm of Super-Tartrite of Potaſs three times a day.

Sept. 12. She was diſmiſſed cured.

CASE

CASE 3.

JAMES FRASER, a ſoldier belonging to the 6th Royal Garriſon Battalion, æt. 32, was admitted into the Infirmary on the 23d of February 1804. The following hiſtory of his caſe was made out by my clerk, Dr John Veitch.

The cuticle over his whole body is in a ſtate of deſquamation, adhering only in large, white, dry ſcales; that of the ſoles of his feet is in one looſe cake. The lower integuments are ſwelled and inflamed; in ſome parts very itchy, in others deprived of feeling, but in moſt places very painful. There is a copious viſcid exudation from the axillæ, groins and perinæum, which is very acrid, and has a ſtrong, fiſhy ſmell. It ſoon hardens and forms incruſtations, which cauſes great uneaſineſs to the inflamed and tender ſkin. From the thickened ſtate of the integuments the lips and palpebræ are very ſtiff; the eyes are ſomewhat inflamed, and there is a conſiderable diſcharge of tears, and alſo of a white glary matter from them and the eyelids. Pulſe 100. Temp. 98. Tongue and fauces dry. Has very little appetite, and conſtant thirſt. Belly rather ſlow. Urine ſcanty and high coloured. He is much debilitated, and is prevented from ſleeping by the uneaſineſs occaſioned by lying.

On the 7th of January laſt, a ſmall chancre appeared on the prepuce. On the 14th he was put upon a courſe of mercury in the form of unction, and on the 28th of the ſame month his mouth was conſiderably affected.

The weather at that time becoming ſuddenly much colder, and in conſequence of expoſure to it, he was ſeized with rigors, headach, nauſea, and great proſtration of ſtrength. Soon after this he felt his thighs itchy; and on the 30th, the febrile ſymptoms continuing, the itchineſs ſpread over his whole body, accompanied with a red eruption and general erythema. The mercury was continued till the 2d of February. At this time a very profuſe exudation took place from the whole ſurface of his body, with deſquamation of the cuticle.

The exudation continued almoſt conſtant till the 16th inſtant; and ſometimes, after a ſhort ſleep, he was ſurpriſed to find the bed-clothes drenched, while his ſkin appeared dry. Since the 16th the exudations have been chiefly from the axillæ, groins, and perinæum, with the other ſymptoms as above deſcribed. He has taken a conſiderable quantity both of Cinchona and of Wine.

Let him have drink acidulated with Sulphuric Acid, at pleaſure; and let the parts of his ſkin moſt affected be anointed with the Linim. Aq. Calcis.

Feb. 24. Has had ſome ſleep at intervals. Pulſe 100. The exudation continues from the arm-pits and groins, and has been more profuſe from the perinæum. Feels much relief from the application of the Liniment.

Habt. Hauſt. Anod. Antim. h. ſ. Cont. alia.

—— 25. Has ſlept better. Thirſt ſomewhat abated, and his appetite is rather better; but his ſkin continues very painful, the exudations frequent, and the fœtor ſtrong.

Cont. med. et Habt. Miſt. Cinch. aromat. ℥ i. quater in die.

—— 27. Has had a good night, and a very copious fetid ſtool by injection. Has taken his breakfaſt well. Exudation and painful ſtate of the ſkin continue, and the fœtor which proceeds from him is moſt exceſſively offenſive.

Cont. med. Rept. enema pro re nat. et Habt. Aq. Card. ℥ viii.

—— 29. Continues to have tolerable nights, and to take his food pretty well; but he is very weak, is hardly able to give himſelf the leaſt aſſiſtance, from the pain occaſioned by motion, and his complaints are ſtill very diſtreſſing.

Cont. med. et Habt. Miſt Cinch. aromat. ℥ i. ſexies in die.

March 1. Both exudation and fœtor conſiderably diminiſhed, and ſkin leſs painful. Continue.

—— 5. Exudation and fœtor continue to decreaſe.

—— 11. No exudation for ſeveral days. Fœtor gone. Skin nearly of a natural appearance every where, only redder than common. Tongue clean and moiſt. Appetite good. Belly regular. Cont. and let him have a bit of beef daily to dinner.

—— 15. Some return of exudation ſince laſt night.

Rept. Liniment. Aq. Calc. et Miſt. Cinch. ad ℥ i. 2da q. q. h. et alia ut antea.

—— 17. Skin again in a very painful ſtate, exudation much increaſed, and the fœtor ſo ſtrong as in general to occaſion nauſea and vomiting to thoſe who remain near him a very ſhort time.

—— 21. Feels ſomewhat eaſier to-day, though he did not ſleep well laſt night.

Fiat hauſt. cum Tinct. Opii gtt. xl. Cont. alia ut antea.

—— 23. Continues in great diſtreſs, exudations frequent, and fœtor exceedingly ſtrong. A trial has been made of a decoction of galls; but he thought it made the parts more uneaſy to which it was applied.

—— 24. Skin continues very painful, and other ſymptoms as yeſterday.

Omitt. Miſt. Cinch. et Habt. pulv. Sulph. Alum. Comp. ℈ i. quater in die. Fiat hauſt. cum Tinct. Opii gtt. lx.

—— 25. Aſperget cut. Farina Tritic. Cont. alia.

—— 26. Finds relief from the application of the flour. Has had ſeveral looſe very fetid ſtools.

Omitt. Pulv. Cont. alia, et utat. Pot. Cretac. mor. ſol.

March 27. Diarrhœa ſtill pretty frequent, but ſtools leſs fetid. Other ſymptoms continue unabated.

Habt. Inf. Cat. Theb. ℥ſs. poſt ſing. ſell. liq. Omitt. Pot. Cret. Cont. alia.

He had been all along in a room of the Fever Ward, in which there was a fire, as he in general had felt very chilly. But the nurſes of that ward being very much exhauſted by the great number of patients at that time in it, and particularly by the loathſome attendance on poor Fraſer (for he could not even feed himſelf); and the convaleſcents, who were at the fireſide, being alſo much diſtreſſed with the fœtor, he was this day carried to a room in the Soldiers' Ward; and, though very weak, he did not ſeem at all fatigued by the removal, but felt much comfort from a complete change of bedding, which had very frequently before been neceſſary. Some excoriation was obſerved on his back from lying.

—— 28. Diarrhœa gone. Exudation ſtill copious; fœtor very ſtrong; and ſkin in general very painful.

Rept. Miſt. Cinch. ad ℥ i. quarta q. q. h. Cont. alia u. a.

—— 29. Loathes his food, and is becoming weaker.

—— 31. Died this morning.

Although, in all theſe caſes, the diſeaſe ſeemed to be produced by expoſure to cold, while the ſyſtem was under the influence of Mercury, yet as its occurrence is infinitely too rare to be the neceſſary conſequence of a cauſe ſo common, ſomething more, probably a peculiarity of conſtitution, is neceſſary for its production. This is rendered more probable from its appearance in Ann Harper, who had uſed ſo very ſmall a quantity of Mercury. It may alſo be remarked, that though the Mercury had been principally exhibited in the form of unction, and the common ointment uſed, except in the caſe of Donaldſon, who alſo got the common pills, and with whom I believe an ointment compoſed of one part of grey oxyde of Mercury, and three parts of Axunge, was ſubſtituted for the common Mercurial Ointment; yet I am diſpoſed to think, that the diſeaſe would have been produced, in whatever form the Mercury had been exhibited, or by whatever preparation of it the ſyſtem had been affected. The diſeaſe was probably aggravated, in both the caſes of Donaldſon and Fraſer, by the frictions having been continued ſeveral days after the eruption and febrile ſymptoms had appeared. But I am at a loſs to account for the relapſe of Fraſer on the 15th of March.

The exhibition of Mercury again on the 8th of June, in the caſe of Donaldſon, though in ſmall quantity, may be thought to have been rather a raſh preſcription. But I had ſeveral reaſons for doing ſo. I was doubtful of the original diſeaſe being completely cured; he had regained a good deal of ſtrength; the cutaneous diſeaſe was much abated; the weather was warm; and I had a wiſh to aſcertain whether the internal uſe of Mercury alone would have any effect in reproducing the diſeaſe. At the ſame time, its effects were carefully watched; and I was determined to ſtop immediately, if he ſhould grow more uneaſy. The Linimentum Aquæ Calcis was preſcribed at the ſame time with the Mercurial Pills; and from whatever cauſe it proceeded, the diſeaſe of the ſkin certainly decreaſed more quickly from that period. He had ſome acceſſion of fever on the 15th of June, which diſappeared before next day. But on the 17th, the itchineſs of his thighs, which ſeems to be in general the firſt ſymptom of the diſeaſe, having again become more conſiderable, I reduced the quantity of Mercury to one pill daily; and on the 22d of June, his recovery going on well, I diſcontinued the pills altogether, as I ſaw no neceſſity for perſevering in their uſe any longer.

What degree of merit the remedies employed are entitled to, in aſſiſting nature in the cure of Donaldſon, and in removing the diſeaſe for a time in the caſe of Fraſer, I ſhall not pretend to ſay. In both of them, the diſeaſe continued about a month, before any ſymptoms of abatement appeared. But it ſeems highly probable, that by diſcontinuing the uſe of Mercury as ſoon as the firſt ſymptoms ſhew themſelves, and by the employment of the warm-bath and ſome gentle diaphoretics, together with laxatives, the progreſs of this violent diſeaſe would be checked; and when fully formed, I would again adopt the ſame method of treatment, until experience ſhall point out one more efficacious.

I have been informed by Dr Duncan junior, that he met with a ſlight caſe of this eruption in private practice, in a girl about nine years of age, who had taken a few powders with Calomel as an alterative, and in whom no ſymptoms appeared of the conſtitution being under the influence of Mercury. It commenced with conſiderable redneſs and ſwelling of the face, which were aſcribed to irritation from the application of a little Ungt. Oxidi Hydrargyri Rubri to the tarſi, which were affected with ſcrophulous inflammation. It extended only over the face, neck, ſhoulders, and upper part of the back, and terminated in a ſerous exudation and deſquamation of the cuticle, exactly reſembling what he ſaw in the caſe of Donaldſon in the Hoſpital, but infinitely leſs ſevere.

P. S. Since the preceding account of theſe Caſes was written, I have ſeen Mr Alley's publication. His caſes, in general, correſpond with mine; although I muſt confeſs that I was not ſenſible of the progreſs of the fever being ſo regular and marked as he has deſcribed it. In my opinion, many more facts and obſervations muſt be collected, before we ſhall be able to give an accurate and complete hiſtory of the diſeaſe, or even to aſcertain the place which it ſhould occupy in a ſyſtem of Noſology. Mr Alley objects to its being called Lepra or Erythema Mercuriale, and propoſes to denominate it the Mercurial Diſeaſe. But, beſides that this appellation conveys no idea of the nature of the complaint, there are other very ſevere and leſs uncommon affections occaſioned by the uſe of Mercury, ſuch as the Mercurial Sore Mouth, and Erethiſmus Mercurialis, which are at leaſt equally entitled to the name of Mercurial Diſeaſe.

I am alſo happy to obſerve, that the mode of treatment, which analogy ſuggeſted to me, coincided ſo nearly with that which the greater experience of the Dublin practitioners found moſt beneficial. The external applications, however, from which my patients ſeemed to derive the greateſt benefit were, Lime-water, Linim. Aquæ Calcis, and Flour.

Although I have frequently, of late, conſulted Mr Benjamin Bell's excellent Treatiſe on the Venereal Diſeaſe, it is ſome years ſince I read the work; and I had no recollection of his having noticed this effect of Mercury. This, however, I now find he has moſt diſtinctly done; although, from the manner in which he ſpeaks of it, the caſes he had at that time ſeen, could not have been of the ſevere nature of thoſe of Donaldſon and Fraſer. As the paſſage ſeems alſo to have eſcaped the notice of the Dublin practitioners, is not very long, and is an important addition to the literature of the diſeaſe, it will be proper to quote it.

'It is not an uncommon effect of Mercury to excite an eruption upon the ſurface of the body. In ſome, this appears as a miliary raſh, ſomewhat reſembling meaſles; while, in others, it is conſiderably elevated, and ſeems to be produced by a ſerous effuſion between the cutis and ſcarf ſkin. In ſome, the eruption is partial, being confined to particular ſpots; while, in others, it prevails generally over the whole body.

'This eruption, or efflorescence, is not attended with pain; but the heat and itchineſs which accompany it, are in ſome inſtances ſo diſtreſsful, that it keeps the patient at all times very uneaſy, and deprives him entirely of reſt.

'The remedies which I have found to anſwer beſt are, the internal uſe of opiates, conjoined with the application of flour or ſtarch-powder to the parts affected. The ſkin is kept ſufficiently cool and eaſy by one or other of theſe powders being from time to time freely applied to the eruption; and, by a proper exhibition of opiates, we ſecure reſt during the night. In ſome inſtances, however, we are obliged to avoid the uſe of opiates; for although they may anſwer the purpoſe of procuring ſleep, they tend evidently to increaſe the heat and itchineſs of the eruption. We find, indeed, that in ſome conſtitutions Opium excites an uneaſy itchy ſenſation over the whole body, even where no eruption has previouſly taken place; and it is perhaps with ſuch patients only that it cannot be employed in the treatment of this eruption.

'The eruption to which I allude, appears to ariſe entirely from the effect of the Mercury upon the ſyſtem; but it does not ſeem to depend upon any particular preparation of the remedy. It takes place indiſcriminately from all of them; and not more readily from unction, than from thoſe preparations that are uſed internally.'*

II.

Two Caſes of Tumours in the Pelvis growing out of the Sacro-ſciatic Ligament, one of which terminated fatally, and the other was cured by extracting the Tumour through an inciſion made into the cavity of the Pelvis through the Perinæum. By P. P. Drew, M. D. Fermoy, County of Cork.

Mrs Shaw of Kilworth, aged 37, mother of ſix children, labours under a large tumour, occupying the whole cavity of the pelvis, which appears, on touching it, like the head of an infant in the laſt ſtage of delivery. It has more the feeling of an oſſification or monſtrous node, than of a fleſhy ſubſtance, and ſeems to adhere firmly to the right ſide. There is no poſſibility of paſſing more than one finger between it and the pelvis, and therefore no reaching the os tincæ. It does not project below the inferior brim of the pelvis; but the labium of that ſide is conſiderably thickened, and protruded before it, ſimilar to the child's ſcalp, when the perinæan tumour is formed.

About five years ago ſhe was delivered of her laſt child, had an eaſy and natural labour, and, until the beginning of May, enjoyed perfectly good health: then firſt ſhe perceived a ſenſe of weight and obſtruction in the vagina, and ſome diminution of ſenſibility in her right leg and thigh, which was particularly diſtreſſing when in the horizontal poſture, and frequently obliged her to get up at night and walk about the room.

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* A Treatiſe on Gonorrhœa Virulenta and Lues Venerea. By Benjamin Bell, Vol. II. p. 228.

July 20. 1802. She was ſeized with a ſuppreſſion of urine, which induced her to ſend for me. She told me ſhe was often afflicted with that ſymptom; but, on taking a cathartic, it was always removed, and that ſhe had taken one now without that effect. On applying my hand to the region of the bladder, I diſtinctly perceived it very much diſtended. I therefore enjoined the neceſſity of employing the catheter. On introducing it, I diſcovered the tumour above deſcribed. At firſt I apprehended it might have been a retroverſion of the uterus; but, on attentive examination, I found it was not the caſe. I met with great difficulty in paſſing the catheter. It required much preſſure on the tumour, it was ſo hard and ſo firmly wedged in the pelvis. I drew off about ſix pounds of urine, which gave inſtant relief. The evacuation of fæces was not as yet impeded, the rectum being protected from compreſſion, as it runs down in the oppoſite ſide of the pelvis from which the tumour grew. Being ſurpriſed at the novelty of the caſe, I requeſted that Dr Pigott, who attended her before, and lived in town, ſhould be ſent for; and he accordingly came. The reſult of our conſultation was, that the removal of the tumour would be attended with imminent danger, as we ſuppoſed it connected with the large veſſels on the inſide of the pelvis, an hæmorrhage from which could not be reſtrained. We therefore left her to her fate, and procured her a flexible catheter, which I ſhewed her maid how to introduce.

Nov. 20. 1802. I was again conſulted, on account of the appearance of matter proceeding from the vagina, which induced her to ſuſpect that the tumour had ſuppurated; but, on examination, I found it had not done ſo, and that no change had taken place, except that it was much more enlarged, and that it was more difficult to paſs the catheter.

Feb. 20. 1803. The tumour was now ſo much increaſed as to obſtruct completely the diſcharge of both fæces and urine. The woman found it impoſſible to introduce the catheter. I was from home, and no relief could be obtained. The abdomen now became very much diſtended. The exhalation from the body had an urinous ſmell. The agony and pain ſhe endured cannot be deſcribed. She grew delirious, and dreadful convulſions terminated her ſufferings.

On hearing of her death, I applied for permiſſion to open the body; and, thanks to her friends, they readily conſented; for my ſucceſs in a ſimilar caſe was owing to the knowledge I acquired in this.

Hiſtory of the Diſſection.

I laid open the abdomen by a crucial inciſion, cut through the ſymphiſis pubis, divided the os innominatum from its connexion with the os ſacrum, and removed the left limb. Now appeared in view the rectum compreſſed. The ſigmoid flexure of the colon much diſtended with hardened fæces. The bladder, above the brim of the pelvis, ſtretched out to the ſize of a gravid uterus, containing at leaſt a gallon of urine. The uterus and its ligaments were in a natural and perfect ſtate. I now removed the vagina and rectum from over the tumour, which I ſeparated from the ſide of the pelvis and ſacrum with my hand alone (that is, without the aſſiſtance of the knife), till I came to the ſacro-ſciatic notch, where I found it firmly fixed, growing out of the ſacro-ſciatic ligament by a ſtrong root, of a hard, griſtly nature; and having cut through this, the tumour came away, like an almond blanched from its ſkin, ſo very ſlightly was it attached to the parts that ſurrounded it.

The tumour was perfectly round, about ſixteen inches in circumference, of a fat, griſtly ſubſtance, without any appearance of circulation in it; no artery entering it; no vein proceeding from it; unconnected with the arteries which run down from the internal iliacs to ſupply the contents of the pelvis, it ſeemed the production of the ligament alone.

Quere—Could not an inciſion have been made at one ſide of the perinæum and anus, backwards, towards the os coccygis, and the root of the tumour proceeding from the ſacro-ſciatic ligament, be come at, and cut through? And as it was ſo eaſy to detach it from the contents of the pelvis, might not it have been without much difficulty removed? Should any artery in the neighbourhood of the perinæum be cut, it could eaſily be taken up; and as the tumour itſelf received no branch from the internal arteries of the pelvis, the hæmorrhage, in all probability, would not be great.

This query I laid before Dr Gibbons and Dr Bullen, two eminent medical friends of mine in Cork, who attended her before I ſaw her, and at that time juſtly thought her caſe incurable; and, even after reading the above hiſtory of the diſſection, they conſidered an operation too hazardous, and the extraction of the tumour, from its great bulk, impracticable, through any inciſion that could be made, independent of the riſk of immediate death from hæmorrhage. But my ſucceſs in the following caſe, ſhould a ſimilar one ever occur to any practitioner, will convince him, I hope, that no great danger or difficulty is to be apprehended.

Aug. 26. 1803. I was called on to Mrs M—— of Liſmore. She had been two days in labour before I ſaw her, and was attended by Dr Power, Dr Hannan, and Mr Pack, ſurgeon to the 41ſt regiment of foot. Thoſe gentlemen were puzzled at the preſentation; and ſo I ſhould have been, had I not met with the preceding caſe. It was exactly the ſame. The tumour grew out of the right ſide, and occupied the whole cavity of the pelvis ſo completely, as to admit of paſſing only one finger between it and the pubes, by which I could ſcarcely reach the head of the child. She ſaid ſhe had, for ſome months back, laboured under dyſuria, ſo that the catheter had been employed by a ſurgeon who attended her, and who attributed that affection to her ſtate of pregnancy, ſuppoſing it to ariſe from the preſſure of the gravid womb; that ſhe had lately acquired the knack of preſſing on the tumour with her finger, which enabled her to make urine without aſſiſtance.

Being convinced of the nature of the caſe, I related that of Mrs Shaw, and repreſented the poſſibility of removing the tumour, with a proſpect of ſucceſs, at leaſt with more than would attend the Cæſarian ſection. Embryulcia was out of the queſtion; it could not be performed; there was no room to extract the child; and, if it had been practicable, ſince the mother's life could be prolonged for a ſhort time only, it involved in it a crime; and to leave our patient undelivered, was cruel and unprofeſſional. They therefore willingly conſented to the operation propoſed.

Having laid my patient on a table, in the poſture of operating for lithotomy, my aſſiſting friends holding each a knee, and the midwife the ſhoulders, I made my inciſion by the right ſide of the perinæum and anus towards the os coccygis, and with the ſecond ſtroke of the ſcalpel brought the tumour into view. I paſſed my finger before and behind its root, which I eaſily divided with the knife; introduced my hand, and detached it from the ſide of the pelvis; withdrew that hand, and introduced the other, by which I ſeparated it with equal facility from the vagina and rectum, and, to their great pleaſure and ſurpriſe, brought it away. A guſh of blood now took place. I crammed in a ſponge, which inſtantly checked it. An artery near the perinæum ſpouted. This I laid my finger on, and could, if neceſſary, in an inſtant have taken up; but all hæmorrhage completely ceaſed. We now turned our attention towards the ſupport of our patient; aſſured her all danger was over. No fainting occurred; her pulſe was ſufficiently diſtinct and ſtrong. We adminiſtered a little wine; but the beſt of cordials was the great pleaſure and ſatisfaction ſhe ſaw in the countenances of us all. A labour pain now came on, ſucceeded by another, and another; the head deſcended into the cavity of the pelvis; the ſponge was protruded from the wound. We retained her for an hour on the table, expecting ſhe would ſoon be delivered; but finding her labour grow tedious, we removed her into bed. Here we truſted to the efforts of nature for ſix hours. Finding the child was preſenting with its face towards the os pubis, and apprehenſive of her wanting ſtrength, I applied the forceps, and delivered her of a living child, which has ſince continued well. The placenta came down into the vagina, and was eaſily removed. No hæmorrhage took place. Four ſtitches were paſſed through the lips of the wound, and a large ſponge was thruſt into the vulva, to keep the ſides of the cavity which contained the tumour in contact, and all the other requiſite arrangements and comforts were employed. We waited on her in the evening; found her as well as we could wiſh; drew off about half a pound of urine with the catheter, for the ſponge prevented her from making it herſelf; left her to her repoſe, and next morning viſited her again. She ſlept well, and complained of little pain from the wound. We drew off her urine, and removed the ſponge from the vagina, which I waſhed out with a ſyringe, and found completely free from any injury or ulceration; replaced the ſponge, and dreſſed the wound with a pledget and T bandage.

Aug. 28. An enema was adminiſtered yeſterday morning, without effect. Some caſtor oil was given in the evening, which produced rather too many evacuations; but no bad ſymptom took place. We removed the ſponge from the vagina, and found the ſpace which the tumour had occupied completely obliterated. But two of the ſtitches had given way, and left the lips in part ſeparated. The ſponge was now omitted, the lips brought together again with a ſtrip of adheſive plaſter. An anodyne was preſcribed, to check the catharſis, and two ſcruples of bark to be taken three times in the day. Here our reports ended, as no unfavourable ſymptom occurred. I viſited her for the laſt time on the 29th, and found her able to ſuckle her child; both completely well, the wound perfectly healed, without a veſtige of any ill conſequence from the operation. Mrs M—— is a ſlender and delicate woman, aged about twenty, and married twelve months; had once before marriage ſome ſlight ſuppreſſion of urine, but attended with no pain. The tumour meaſures fourteen inches in circumference, weighs about two pounds eight ounces, and is of the ſame nature and conſiſtence with that found in Mrs Shaw.

As the above caſes are very uncommon—as the operation was attended with unexpected and ſignal ſucceſs, and the cure complete—and ſince many of the Profeſſion are inclined to diſcredit ſuch caſes, it may not be amiſs to ſubjoin the teſtimony of thoſe who were preſent. I have therefore obtained the ſignatures of Dr Power, Dr Hannan, and Mr Pack.

Preſent—
ALEX. POWER, M. D.
DENNIS HANNAN, M. D.
PIERCE PACK, Chir.

PASCAL PAOLI DREW, M. D.
et Chir. necnon Soc. Reg.
Med. Edin. Soc. Exord.

III.

On the treatment of Chorea Sancti Viti, *by Purgatives.* By John M'Mullin, Member of the Royal Medical Society of Edinburgh.

FEW circumſtances have contributed more to retard the progreſs of the healing art than premature generalization. Our opinions are often derived from the conſideration of inſulated facts, which have accidentally made a ſtrong impreſſion on our minds. The partial views thus obtained, from our impatience to arrive at general principles, we immediately aſſume as the baſis of a ſyſtem which we believe to be incontrovertible; becauſe, with unconſcious partiality, we exaggerate the importance of every argument which ſeems to ſupport it, and neglect or diſtruſt every fact with which it is incompatible.

Thus, having obſerved that many diſeaſes of general debility are removed by tonics, and increaſed by evacuations of every kind, we have haſtily concluded, that in all diſeaſes where debility is preſent, evacuations are to be avoided, and that tonics are the only means from which a cure is to be expected. What has been the conſequence? Many diſeaſes of ſymptomatic debility, which have reſiſted the uſe of tonics, have either been conſidered as incurable, or our failure has been aſcribed, not to our purſuing an erroneous method of treatment, but to our means having been too feeble, or employed too late; and, obſtinately perſiſting in the tonic plan on each ſucceeding occaſion, we puſh it with greater vigour, and with the ſame want of ſucceſs. There are, however, fortunately, practitioners who act more philoſophically, and, regarding with diſtruſt theories which do not ſtand the teſt of experience, endeavour to advance the ſcience of medicine by the ſlow but ſure method of obſervation and induction. It is in this way that we ſometimes find a diſeaſe yielding to a plan of treatment diametrically oppoſite to that which the eſtabliſhed opinions concerning its nature would have ſuggeſted. Whenever ſucceſsful experiments of this kind occur, whether they have been the effect of chance or the reſult of accurate inveſtigation, it is of importance that they be rendered as public as poſſible, with the view of alleviating the ſufferings of thoſe labouring under ſimilar complaints, and of correcting the erroneous ideas entertained of the nature of the diſeaſe, ſo that at laſt a better and more certain method of cure may be eſtabliſhed. It is from theſe conſiderations, chiefly, that I am induced to publiſh ſome obſervations which occurred to me in conſequence of having witneſſed the cure of ſome caſes of Chorea Sancti Viti in the Royal Infirmary of this place. In theſe caſes, a mode of treatment was adopted, which no opinion of the diſeaſe, hitherto publiſhed, ſeemed to authoriſe; although, in every inſtance, it was attended with the moſt marked advantages. This treatment conſiſted in the repeated frequent exhibition of draſtic purgatives, which will appear, on peruſing the following caſes, not to have had the effect of debilitating ſtill more, an apparently debilitated ſyſtem; but, on the contrary, during their employment, the patients recovered ſtrengh, the involuntary motions gradually abated, and, by perſiſting in this treatment for a ſhort time, a perfect cure was effected. What is particularly worthy of obſervâtion, is the appearance of the alvine diſcharge, which, in every inſtance, was black and fetid. The firſt four caſes were treated by cathartics ſolely; in the laſt caſe ſome tonics were uſed, but not until the cure was nearly completed by the purgative plan. It is however to be obſerved, that the tonics were not given with a view to obviate any debility which might ariſe in conſequence of the cathartics employed; for the patient was at that time much ſtronger than before admiſſion.

The firſt caſe was that of

William Sinclair, æt. 10, admitted Auguſt 2d 1802, affected with irregular involuntary motions of the ſuperior extremities, and occaſionally with a diſeaſed action of the muſcles of the face, producing great diſtortion in the expreſſion of the features, attended with fluſhing in the face, pain in the occiput, and difficult articulation. Although he cannot ſtand erect without being ſupported, he yet poſſeſſes in ſome meaſure the command over the inferior extremities, and was obſerved, before this took place, to drag one leg after the other. He ſeems much debilitated. Belly ſomewhat tenſe and tumid. Pulſe about 90; rather feeble. Appetite impaired. Belly regular; but the ſtools in ſmall quantity. He was taken ill a fortnight before admiſſion, and within theſe few days the ſymptoms have become worſe. Has uſed no remedies.

Aug. 3. ℞. Sub-Mur. Hydr. gr. iij.
Pulv. Jalap. gr. x.
Fiat pulvis primo mane ſumendus.

—— 5. The ſtools of yeſterday and this morning are copious, and of natural appearance. Belly is leſs tenſe. Pulſe calm. Irregular motions and pain of occiput continue; but he walks with more ſteadineſs.

Cras Repr. Pulv. e Sub-Mur. Hydr. cum Jalap.

—— 6. One feculent ſtool ſince morning. Headach and irregular motions nearly the ſame. His ſtep is ſtill more ſteady and firm.

—— 8. Has continued convaleſcent. Diſmiſſed cured.
Habt. ſecum Sub-Mur. Hydr. gr. x.
Sach. ℈ ii. intime miſceantur. Tritura et divide in dos. viij. One every night.

Elizabeth Lawrie, æt. 14, admitted 12th September 1803, affected with almoſt conſtant involuntary motions of the left arm, and involuntary contractions of the muſcles of the face, and other ſymptoms ſimilar to the laſt. Belly regular, heat of ſkin natural, pulſe 75. Has been labouring under this complaint for two weeks. It was preceded by headach and ſpontaneous vomiting. Has uſed ſome remedies, with the nature of which ſhe is unacquainted.

Sept. 13. Habt. q. p. Bol, e Sub-Mur. Hydr. cum Jalap.; et veſpere, ni ſolvatur alvus, Enema domeſticum.

—— 14. Several copious, feculent, but fetid ſtools.
Habt. omn, noct. Pil. Aloet. iij.

—— 15. One ſtool in the courſe of the evening. Involuntary motions abated,—Repr. Pil. Aloet, veſp. et Sumt. cras mane Infus. Sennæ ℥ iij.

—— 16. Cathartics continued.

—— 17. Walks with increaſing firmneſs and vigour. Irregular motions of left arm continue to ſome extent. No ſtool from laſt cathartic.
Habt. q. p. Hauſt. ex Oleo Ricini. Repr. Pil. Aloet. et Infus. Sennæ ut antea.

—— 18. Contr. Cathart.

—— 19. No ſtool. Involuntary motion of left arm aggravated.
Habt. q. p. Bol. e Sub-Mur. Hydr. cum Jalap.
Intr. Pil. Aloet. & Infus. Sennæ.

—— 20. A conſiſtent fetid bilious ſtool. Rejected the bolus by vomiting.
Habt. Pil. Aloet. xij. Sumt. ij. omni quadrihorio.

Sept. 21. No ſtool. Contr. Pil. ut heri.

—— 22. Paſſage of the belly in the courſe of yeſterday. Motions of the arm more ſteady. Contr. Pilulæ.

—— 24. Belly open. Stools of firm conſiſtence, dark colour, and ſtill fetid. Irregular motion ſtill more relieved.

Contr. Pil. Aloet.

—— 26. Habt. veſp. Enema purgans. Cras mane Infus. Sennæ ℥ iv. duobus vicibus. Intr. Pil. Aloet.

—— 29. Three natural ſtools. Diſmiſſed cured.

Habt. ſecum Pulv. Jalap. comp. ℥ iv. divid. in doſ. xvj.—one every morning.

Thomas White, æt. 9, admitted 28th December 1803.—Affected in every reſpect ſimilar to the laſt patient, except that, during ſleep, the involuntary motions continue. Pulſe natural; Belly regular. Theſe ſymptoms have been preſent eight days. The right ſide was firſt attacked, and ſeems to be more affected than the left.

Dec. 29. Habt. Bol. e Sub-Mur. Hydr. cum Jalap.

—— 30. Repr. Bolus.

—— 31. Two ſtools, both ſcanty, of a pale yellow colour, and ſomewhat tough conſiſtence. Involuntary motions are leſs violent, and diſappear during ſleep. He walks more ſteadily. Repr. Bolus.

Jan. 1. Repr. Bolus.

—— 2. Pil. Aloet. ij. omni trihorio.

—— 3. Copious feculent diſcharge, of natural appearance. Eyes more lively, and countenance of more healthy appearance. Involuntary motions nearly gone. Appetite improves. Since yeſterday's viſit 10 pills taken.

Contr. adhuc Pil. Aloet. uſque dum iterum plene dejiciatur alvus.

—— 4. Has had a farther copious, and, to appearance, natural alvine diſcharge. Appetite ſtill mending, and involuntary motions ſubſiding.—Intr. Pil. Aloet.

—— 7. Has continued convaleſcent. Diſmiſſed cured.

Habt. ſecum Pil. Aloet. xxiv. one or two every night.

Margaret Jameson, æt. 16, admitted May 10th 1804.—Affected ſimilar to the laſt caſe, except that, during ſleep, the involuntary motions do not continue, although during the night they are particularly ſevere, and prevent her enjoying much ſleep. Pulſe 84. Tongue clean. Appetite impaired. Thirſt conſiderable. Belly bound. Catamenia appeared only once, and in ſmall quantity, more than ten months ago. This affection commenced about the middle of January laſt; previous to which ſhe had been in good health. The left arm and leg were firſt attacked, and, about a fortnight ago, changed to the right ſide. Has uſed a great variety of remedies, with the nature of which ſhe is ignorant, without relief.

May 11. Motion rather better ſince admiſſion.

℞ Sub-Mur. Hydr. gr. iij.
Pulv. Jalap. comp. gr. x. M. Ft. Bol. ſtatim ſumend.

—— 12. Two ſtools only from cathartic. Thinks herſelf better.

℞ Submur. Hydr. gr. v.
Pulv. Jalap. gr. xv. M. Ft. Bol. cras primo mane ſumend.

—— 13. Involuntary motions much diminiſhed. Fæces natural. Medicine operated well.

℞ Cras mane Bol. ut antea præſcript.

—— 16. Cathartic operated four times. Fæces black and fetid. Convulſive motions very much diminiſhed.

Iterum Repr. cras mane Bol. ut antea.

—— 18. Cathartic operated well. Fæces natural. Involuntary motions almoſt gone. Full diet.

—— 20. Involuntary motions entirely gone. Diſmiſſed cured.

Mary Murray, æt. 15, admitted 8th June 1804. Affected almoſt conſtantly, in a greater or leſs degree, with irregular and involuntary motions of the head, tongue, lower jaw, both ſuperior extremities, and right inferior (the left not being at all affected), turning them in various directions, and cauſing any voluntary exertions of theſe parts to be very unſteadily performed, ſo that ſhe cannot feed herſelf. She drags the right foot in walking. Theſe motions entirely ceaſe during ſleep. She is alſo affected with headach, very indiſtinct articulation, imbecility of the mental functions, and frequent fits of crying without any evident cauſe. Swelling of the abdomen comes on in the evening, which diſappears in the morning. Pulſe 80. Tongue clean. Appetite good. Belly very bound. Theſe complaints commenced about three months ago, with pains in her legs and arms, apparently of a rheumatic nature, and which were aſcribed to expoſure to cold. Theſe were removed by laxatives and external applications; after which theſe motions gradually ſupervened, firſt in the legs, then in all the parts at preſent affected. Previous to this attack ſhe was an healthy girl, and of a lively, active diſpoſition.

June 9. ℞ Sub-Mur. Hydr. gr. v.
Pulv. Jalap. gr. xv. Ft. Bol. primo mane ſumend.

From this date to the 21ſt, the cathartics were continued daily, with the exception of one day. They generally produced two or three ſtools.

—— 11. Three more ſtools, of natural appearance, yeſterday afternoon, from the cathartic. Involuntary motions ſomewhat better. Countenance more natural.

—— 15. Purgative operated three times after the viſit. Stools black and fetid.

—— 19. Cathartic of this day produced nauſea and vomiting. Two ſtools. Involuntary motions much diminiſhed.

—— 21. Five natural ſtools ſince yeſterday. Does not complain of debility. Countenance more natural. Motions much diminiſhed.

—— 29. Since laſt report, involuntary motions much better. Fæces natural. Omitt. Bolus.

℞ Pulv. Cinchon. Off.
Pulv. Valerian. Sylv. p. æq. Capt. gr. xxx. forma Boli bis indies.

July 1. Involuntary motions rather better. Belly bound.
Capt. cras mane Bolum ex Sub-Mur. Hydr. gr. v.
Pulv. Jalap. gr. xx.

From this date to the 14th, the tonics and cathartics were preſcribed daily; during which time the fæces preſented a natural appearance. On the 14th, fæces natural. Involuntary motions almoſt entirely gone. Diſmiſſed cured.

From theſe caſes, the following facts ſeem to be eſtabliſhed:

1ſt, From the exhibition of even two or three cathartics, the involuntary motions, and other ſymptoms, were much abated.

2dly, Although the cathartics were continued daily for a conſiderable length of time, the patient, inſtead of becoming more debilitated, became ſtronger, and walked with a firmer pace.

3dly, During the progreſs of the cure, if at any time the cathartics did not produce an evacuation, the involuntary motions recurred, and all the ſymptoms were aggravated.

4thly, The fæces, before the exhibition of the cathartics, were ſmall in quantity, required a large doſe of the purgative, and in every inſtance were black and fetid.

And, *laſtly*, When the diſeaſe was cured, the appearance of the fæces became natural.

Upon the whole, the connexion of the diſeaſe with the ſtate of the inteſtinal diſcharge, ſeems evident; and as, in all the five caſes, fetid, dark-coloured evacuations preceded the cure, it would appear that, with them, the cauſe of the diſeaſe was removed. We may therefore, I think, legitimately conclude, that the involuntary motions, debility, and other ſymptoms, were in theſe caſes produced by local irritation in the bowels, which was afterwards communicated to the whole ſyſtem through the medium of the nerves.

The diſeaſe occurs very rarely indeed, except in children under the age of puberty, and of a delicate conſtitution. In ſuch habits, irritation may be produced by very ſlight cauſes, ſuch as a depraved ſtate of the inteſtinal ſecretions, an accumulation of fæces, worms, teething, &c. From the appearance of the ſtools, it ſeems highly probable that the liver was affected; and this idea is rather ſupported by the effects produced from the remedies exhibited. There was alſo, probably, an accumulation of fæces, from the uſe of food too coarſe for their weak digeſtive organs to aſſimilate, conjoined with a want of that exerciſe which is neceſſary for healthy digeſtion, as is the caſe with thoſe children who are kept at an early period of life, confined to a ſedentary occupation, of which we have an inſtance in Mary Murray, who was a flax-ſpinner. I have alſo been informed, that in the Orphan Hoſpital of Milan, the diſeaſe at one time occurred ſo frequently, as to induce a ſuſpicion that it was contagious, or at leaſt, like epilepſy, imitative; and it proved ſo obſtinate, that it was conſidered as incurable. The true cauſes were, probably, improper food and confinement; and the treatment was under the direction of the Ciſalpine Exdirector Moſcati, who was juſt at that time actively employed in revolutionizing the medical opinions of his country, and who was one of the firſt to apply the Brunonian doctrine to practice.* His treatment muſt have been tonic, and his failure was notorious. The irritation from worms in the inteſtinal canal may alſo produce this diſeaſe; but, in none of the five caſes we have related, did any ſymptoms occur, which could render it probable that they aroſe from this cauſe.

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* 'The Italian Phyſicians are much indebted to the celebrated Dr Moſcati, and to Raſori; to the firſt, for having cauſed the Elementa Medicinæ to be reprinted; and to the ſecond, for his elegant tranſlation of the Compendium of the New Doctrine of Brown, to which he has added notes, and a preliminary diſcourſe.' Introduzione alla Storia della Medicina antica e moderna di Roſario Scuderi, M. 8vo. Napoli, 1796.

Teething is another ſpecies of irritation, which was firſt obſerved to produce Chorea by Dr Monro. A young lady was affected with Chorea of one ſide. On examining her mouth, it appeared that ſhe was cutting one of the molares of the ſame ſide. Dr Monro directed a crucial inciſion to be made through the gum, and the diſeaſe ceaſed in a few days. Some months afterwards, ſhe was again ſeized with Chorea, but the other ſide was affected; and, on examination, it was again found that ſhe was cutting one of the molares of the affected ſide. A deep crucial inciſion again removed the diſeaſe. * This obſervation is confirmed by Dr Gregory. He was called to a boy very ill of Chorea; and on examining his mouth, he found that the ſecond ſet of teeth was puſhing up by the ſide of the firſt, which had not fallen out at the uſual time. By removing a conſiderable number of the firſt ſet, the diſeaſe was removed in a very ſhort time, although, formerly, the ſpaſms had been ſo violent as to throw him down on the ſtreet. Next year he had another attack, which was removed by taking out the reſt of the firſt ſet of teeth. He was again attacked, however, at the age of fifteen; and as no cauſe of irritation could be diſcovered in the mouth, he was treated with Extract of Cinchona and Sulphate of Iron, and was cured. Another boy, who was twice attacked with Chorea was cured both times by ſcarifying his gums. Although Dr Gregory does not attempt to explain why the ſecond ſet of teeth ſhould thus produce Chorea, while the firſt produces Epilepſy, he conſiders the fact as eſtabliſhed, and as forming a very valuable addition to the hiſtory, pathology, and treatment of the diſeaſe. Theſe important facts directly ſupport the opinion which I have advanced, that the ſymptoms of Chorea depend on local irritation, and not on debility; and that they are to be removed by removing the cauſes of irritation, by ſcarifying the gums, by expelling the worms, or by the uſe of briſk purgatives. This theory and treatment differ, indeed, extremely from thoſe advanced by the authors of the greateſt reputation. Sydenham aſcribed it to a humour thrown upon the nerves; and his indications of cure were, to diminiſh it by blood-letting, and the uſe of purgatives, while, at the ſame time, he ſtrengthened the nervous ſyſtem. † But blood-letting was

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* Dr Monro ſenior, Lectures on Anatomy and Surgery.

† Cum adfectus iſte ab humore aliquo in nervos irruente, quorum irritatione iſtiuſmodi motus præternaturales producuntur pendere mihi videntur. Indicationes curativas primum ad humores illos tam venæſectione quam purgatione minuendos, dein ad corroborandum genus nervoſum omnino dirigendas cenſebam.—*Schedula Monitoria.*

was found, by Sauvages and Cullen, to be very prejudicial in many caſes, and is no longer preſcribed; and Dr Gregory thinks it highly probable that the ſucceſs of Sydenham's treatment was owing entirely to the tonics, and not at all to the purgatives or bleeding. Dr Cullen advances no theory of the diſeaſe, but ſays it often yields readily to tonic remedies, although he confeſſes that he has ſeen it continue for many months, in ſpite of remedies of all kinds. Dr Brown does not mention this diſeaſe particularly; but we can be at no loſs for his ſentiments with regard to it. With his uſual dogmatiſm, he aſſerts that all ſpaſmodic diſeaſes are diſeaſes of debility, and yield readily to tonics and antiſpaſmodics.* The firſt part of this aſſertion is hypothetical, and the ſecond is erroneous. Darwin ſuppoſes Chorea to be a diſeaſe of aſſociation, conſiſting in decreaſed aſſociate motions, catenated with voluntary motions. He ſays that the patient can at any time lye ſtill in bed, which ſhows that it is not a convulſive motion. But our patient Jameſon could not lye ſtill in bed, and yet no one will doubt her being affected with Chorea. The only cauſe of this diſeaſe which he notices, is the itch being too haſtily cured; and, to remove it, he preſcribes the following means: 'Give the patient the itch again. Calomel a grain every night, or Sublimate a quarter of a grain twice a day for a fortnight. Steel. Bark. Warm Bath. Cold Bath. Opium. Veneſection once at the beginning of the diſeaſe. Electricity. Perpetual flow and repeated efforts to move each limb in the deſigned direction, as in the titubatio linguæ above deſcribed.'

It is evident that all theſe ſyſtematic writers have conſidered Chorea as a diſeaſe of debility; and the ſame opinion has been almoſt univerſally adopted by practical phyſicians, who, ſeeing their patients labouring under evident debility, have ranſacked the whole Materia Medica for tonics and antiſpaſmodics. Under this treatment, Chorea has always been conſidered as very difficult to cure; and, in the generality of caſes, if not removed by the change which the ſyſtem undergoes at the age of puberty, has continued to haraſs the wretched ſufferer ever afterwards. Now, when we compare the frequent failures of the tonic plan of cure with the invariable ſucceſs of the purgative, we muſt conclude, in direct oppoſition to the hypothetical dogma of Brown, that the ſymptoms of Chorea do not depend primarily on debility, but

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* In treating of Triſmus, Brown has theſe words: 'DCXLV. E debilitate eſſe, fidem faciunt, *omne ſpaſmi genus ſemper in debilitate poſitum*, nulla tetani, qui idem prorſus adfectus eſt, magnitudine tantum differens, origo alia, denique hujus, pariter, et *aliorum omnium ſpaſmorum, curatio ſtimulatrix felix, infelix antiſthenica.*'

that the debility is merely ſymptomatic of the diſeaſe. But, in whatever manner the phenomena of theſe caſes may affect the theory of the diſeaſe, they eſtabliſh, incontrovertibly, a much more important concluſion,—that it yields readily to the repeated and continued uſe of draſtic purgatives.

For this improvement in the practice of Medicine, we are indebted to Dr Hamilton, ſenior Phyſician to the Royal Infirmary of Edinburgh.

IV.

Caſes in which diſeaſed portions of the Tongue were ſucceſsfully removed by means of Ligatures. By Andrew Inglis, M. D. Fellow of the Royal College of Surgeons, and one of the Surgeons to the Royal Infirmary of Edinburgh.

Donald M'Kay, aged 24, was admitted into the Hoſpital on the 24th of July 1803. There is a tumour of a pretty firm conſiſtence, rough and irregular on the ſurface, ſomewhat reſembling a mulberry, occupying the upper and left ſide of the tongue, from the root to within an inch of the extremity. It riſes about a quarter of an inch above the ſurface of the tongue, and is about an inch in breadth. On its lower edge, there is a ſmall ulceration which only admits the point of a probe, and does not ſeem to penetrate into its ſubſtance. It is attended with conſiderable pain, increaſed on preſſure. One of the ſubmaxillary glands is enlarged, and his deglutition is alſo greatly impeded. This affection began nineteen years ago, in the form of a ſmall tumour like a pea, in the middle of the tongue, ſince which time it has gradually increaſed to its preſent ſize. The pain was not ſevere until about five months ago, when it became ſharp and lancinating, accompanied with frequent and profuſe hæmorrhagies from the tongue, of which, however, there has been no return theſe laſt two months.

After his admiſſion into the Hoſpital, the form and ſize of the tumour gradually increaſed. The ſwelling of the ſubmaxillary gland remained ſtationary, and ſome inflammation and ſwelling of the parotid gland were obſerved; and he complained much of thirſt, parchedneſs, and burning heat in his mouth. It was now determined to remove as much of the tumour as poſſible, as the only means of giving him any chance of recovery.

On the 27th of Auguſt, a crooked needle, threaded with two ligatures, one white and the other red, was paſſed through the ſubſtance of the tongue, from the left edge below the tumour, about half an inch from its anterior extremity, and brought out on the right ſide of the upper ſurface of the tongue beyond the tumour. The red ligature was now drawn out of the needle, and a black one put on. The needle, carrying the black and white ligatures, was plunged into the tongue on the right ſide of the tumour, about two inches farther back, and brought out below the tumour on the left edge; ſo that the wounds made by the needle were nearly parallel. Having removed the needle from the ligatures, the two ends of the red one were tied, ſo as to include the anterior part of the tumour; the two ends of the black one were tied as far back as poſſible; while, on tying the ends of the white ligature, the whole baſe of the tumour was inſulated, and the circulation in it ſtopped. Immediately after the operation, he got a draught with fifty drops of Tincture of Opium.

Aug. 27. Eight P. M. complains of excruciating pain ſince the operation. The draught was ordered to be repeated at bedtime.

—— 28. Slept none during the night; but feels much eaſier to-day, as the pain is conſiderably abated.

—— 29. Slept well during the night, and he is now pretty eaſy; but he complains that he cannot eat on account of his tongue.

—— 30. Was very reſtleſs during the night, although he took his draught as before, and complains much of pain to-day.

Sept. 1. In conſequence of the white ligature becoming looſe, on account of the diminution of the tumour, a freſh ligature was to-day carried round its baſe, by means of an eyed probe. He has ſince complained of intolerable pain, attended with great ſalivation. The ſwelling of the ſubmaxillary gland has of late increaſed. He was allowed a bottle of porter daily.

—— 5. Feels rather eaſier. Salivation ſomewhat diminiſhed. The tumour on his tongue ſeems to begin to ſlough: for ſome days paſt it has been of a whitiſh colour. Breath fetid. Much thirſt.

—— 7. Was ſeized with epiſtaxis yeſterday morning, which again returned laſt night when he was aſleep, and has weakened him conſiderably; but complains leſs of pain to-day.

—— 13. Has paſſed a good deal of blood by ſtool, attended with teneſmus.

Sumat Sub-muriat. Hydrarg.
Pulv. Rad. Conv. Jalap. ana gr. iv.
Rept. etiam Hauſt. Anod. cum Tinct. Opii gtt. lxx. hora ſomni.

—— 15. Tongue continues much the ſame; but as the white ligature had again become looſe, on account of the further diminution of the tumour, a freſh one was applied round its baſe.

Sept. 16. Complains much of pain ſince the laſt ligature was applied. Belly coſtive. Capiat Pulv. Conv. Jalap. comp. ʒ i.

—— 25. Complains much leſs of pain. The former ligatures having all become looſe, a freſh ſet was this day applied.

Sumat Hauſt. Anod. cum Tinct. Opii gtt. l. et Capt. Elect. Caſſiæ cum Senna, pro re nata.

—— 26. Complains much of pain in his head and tongue, and alſo in the ſubmaxillary gland, which is conſiderably enlarged.

—— 30. The tumour begins to have a ſloughy appearance.

Utatur Decoct. Aſtring. comp. pro Gargariſm.

Oct. 1. The part of the tumour included within the ligatures, was to day completely ſeparated from the tongue and taken off, and he now feels pretty eaſy.

—— 9. The part of the tongue from which the anterior portion of the tumour had been removed, being now completely cicatrized, it was thought adviſeable to remove, by the ſame means, the remaining portion of it, extending to the root of the tongue.

With this view, a needle, threaded with two ligatures, was plunged in below the anterior extremity of the tumour, and carried backwards, ſo as to be brought out entirely beyond it. On tying the one ligature to the right ſide, and the other to the left, the remaining part of the tumour was completely inſulated. Immediately after the operation, he got a draught with forty drops of Tincture of Opium.

—— 22. The ligatures were tightened.

—— 26. The tumour is now almoſt ſeparated, and the ligatures were again tightened.

—— 29. The tumour is now completely removed from his tongue; but he ſtill complains of ſome pain in the ſide of his mouth.

He remained in the Hoſpital until the 14th of November, when he was diſmiſſed cured; and he has, ſince that time, continued perfectly well.

CASE 2.

HANNAH BLAND, aged 10, was admitted into the Hoſpital on the 24th of June 1804. A tumour of a red colour, and apparently of a ſpongy texture, on which numerous granulations of a pearl colour can be perceived by means of a magnifying glaſs, is ſituated near the point of her tongue, projecting beyond, and affecting both its upper and under ſurface. It is attended with little pain or inconvenience, and is ſaid to have commenced about three years ago, in the form of ſome ſmall warts, which, in the courſe of ſix months, began to aſſume the appearance above deſcribed, and to extend farther upon the tongue. For ſome time paſt it has remained ſtationary. Her general health is unimpaired; and there does not ſeem to be any enlargement of the ſublingual or maxillary glands.

June 28. She complained of ſlight pain in the throat and neck, increaſed by deglutition.

July 5. A crooked needle, threaded with two ligatures, was paſſed from below, upwards and backwards, ſo as to get beyond the diſeaſed portion of the tongue; and, by tying the two ends of the one ligature to the right, and the two ends of the other ligature to the left, the whole diſeaſed portion was included between them, and the circulation in it completely ſtopped. She complained little of pain from the operation. But immediately after it, ſhe got an Anodyne draught, with fifteen drops of Tincture of Opium, and ſhe was ordered two pounds of beef-tea daily.

—— 6. Complains of conſiderable pain in her tongue, and of a diſagreeable taſte in her mouth. Utatur Infuſ. Roſar. Gallic. pro Gargariſm. Rept. Hauſt. Anod. Aromat. cum Tinct. Opii gtt. xx veſpere, et Sumat cras mane Pulv. Rad. Conv. Jalap. comp. ʒ ſs.

—— 7. The portion of the tongue included between the ligatures begins to aſſume a black appearance. Cont. Med.

—— 8. Pain of tongue and unpleaſant taſte in her mouth much the ſame; but a conſiderable flow of ſaliva has ſupervened. Belly rather bound. Pulſe 96. Skin hot.

Sumat Pulv. Conv. Jalap. comp. ʒ ſs.

—— 9. The ligatures having become looſe from the decreaſe of the tumour, another pair was applied in the ſame manner; and ſhe complained much of pain from the operation.

Capiat ſtatim Hauſt. Anod. ut antea, et Repetatur veſpere, ſi opus ſit.

—— 11. Complains much of pain and bad taſte in her mouth.

Cont. Gargar. Infuſ. Roſ. Gallic. Sumat ſtatim Pulv. Conv. Jalap. comp. ℈ ij.

—— 13. The portion of the tongue included between the ligatures came away to-day. Cont. Med.

After this, the pain ſoon ceaſed altogether; and on the 9th of Auguſt ſhe was diſmiſſed perfectly cured.

The ſucceſsful termination of theſe caſes is a proof of the progreſs which the Art of Surgery is daily making. A very few years ago, theſe patients would have been abandoned to their fate; and in all probability their exiſtence would have terminated by a lingering and painful diſeaſe. The ſenſibility of the tongue was always conſidered ſo great, that ſurgeons were afraid of the irritation which they believed ligatures would produce; and the vaſcularity of its texture precluded the poſſibility of removing any conſiderable portion of it by the knife. But an accident which fortunately fell under the obſervation of Mr Home of St George's Hoſpital, London, having convinced him that the irritability of the tongue was very much overrated, he took the firſt opportunity which occurred of aſcertaining the ſucceſs or danger which might reſult from the uſe of ligatures in attempts to remove a portion of it when diſeaſed. His ſucceſs was equal to his moſt ſanguine expectations; and he performed a perfect cure in the three firſt caſes with which he met.

The caſes above deſcribed which fell under my care as one of the ſurgeons of the Royal Infirmary of this city, form an addition of conſiderable importance to the obſervations on the ſtructure of the tongue by Everard Hume, Eſq. F. R. S., publiſhed in the Philoſophical Tranſactions, as they not only confirm all the concluſions contained in that paper, but that of M'Kay proves that, even where the diſeaſe has made very conſiderable progreſs, we need not deſpair of effecting a cure. In this inſtance, nearly the whole upper ſurface of the tongue, from within a little of the tip to the very root, was removed, the tongue being as it were ſplit horizontally, and the upper half taken away; and even in this man the cure might have been effected in a ſhorter time, if at the firſt I had tightened the ligatures with greater confidence; but, owing to the great thickneſs of the tongue, the firmneſs of the tumour, and the ſtrong, compact, muſcular ſtructure of the tongue included between them, they became repeatedly ſo looſe that they were obliged to be tightened or renewed. This caſe was attended with another very great difficulty, which was the impoſſibility of removing all the diſeaſed part by the firſt operation, on account of the great length which it extended backwards; and even after the removal of the anterior portion rendered it more eaſy to get at what remained, ſtill the ſecond operation, performed on October 9th, was attended with very great difficulty. For, after paſſing the needle beyond the diſeaſe, I found it impoſſible to draw it through, on account of the narrowneſs of that part of the fauces, as, on every attempt to turn the needle, the point run into the uvula. I was therefore obliged to withdraw it entirely, and to carry through the ligatures by means of a very flexible ſilver-eyed probe, which I paſſed through the paſſage made by the needle. In the firſt caſe, the operation was performed before I or any of my medical friends had ſeen Mr Home's obſervations; but, in the ſecond, which approached nearer Mr Home's caſes, it was performed after I had ſeen them. In this, the tumour dropped off much ſooner, partly owing to its not being ſo firm, and partly owing to the ligatures being pulled tighter. I ſhould think it however adviſeable not to draw them very firm at firſt, but gradually to tighten them, or apply new ones, as the cicatrix forms while the ligatures are extirpating the tumour; by which means, when it drops off, the ſore left is rendered extremely ſmall.

V.

Caſe of a Remarkable Conformation of the Urinary and Genital Organs in a Female Child, with an Engraving. By Mr W. H. Coates, Surgeon to the 5th Dragoon Guards.

The following caſe of variety from Nature's accuſtomed walk, I beg leave to preſent for inſertion in the Edinburgh Medical and Surgical Journal, if it ſhall be thought worthy of a place. It occurred to me in practice, four years ſince, and appears ſo very intereſting, that I truſt I ſhall need no apology in communicating it to the medical world; for although it is not a ſingular caſe, yet inſtances of this kind are by no means common, and few have been detailed with ſufficient accuracy. It beſides adds to the maſs of evidence which decides it to be a diſtinct claſs of malformation, and may poſſibly lead ultimately to important concluſions.

Perhaps this caſe will not elucidate any phyſiological problem; it however ſerves to ſtrengthen the fact, that this variety of malformation does not conſiſt of chance caſes, but, in its leading features, is ſubject to ſome general law: for in this, as in moſt other inſtances where Nature ſteps aſide, ſhe does not err merely in one reſpect, but other parts of the ſame ſubject are equally monuments of her whimſicality with thoſe apparently connected with her firſt object. Several caſes of the ſame kind are on record, but a very ſmall proportion indeed are females, and the deſcription of theſe is generally defective: in all of them, the external organs of generation differ moſt eſſentially from each other, and from the uſual natural appearances. That this ſhould be the fact in the males, in whom the paſſage from the bladder is alſo the conducting tube for the ſemen, is not ſurpriſing; but in females, where the generating and urinary organs are diſtinct, it is moſt ſingular.

The caſe alluded to is that of an infant, one of female twins, belonging to a reſpectable private ſoldier of the regiment in which I have the honour to ſerve. In many reſpects it is ſimilar to that recorded by Dr Baillie in the Medical and Chirurgical Tranſactions of 1793, Vol. I., and to that of a young man, (Mathew Uſſem), a native of Cologne, alſo noticed by Dr Baillie, and who, I believe, is ſtill living. Both theſe caſes I have myſelf frequently ſeen, and I was occaſionally preſent during the diſſection of the former. Probably the caſe I am about to deſcribe does not differ in the more eſſential points from the above, except in being of the oppoſite ſex, with the varieties neceſſarily attendant on the organs of generation, which, as far as external obſervation can decide, are all involved in this luſus naturæ.

The infant, at the time of taking the drawing and deſcription, was two months old; a ſtrong healthy girl, by much the more robuſt of the two. In the hypogaſtric region, and about half an inch above the pubes, there protrudes from the abdomen, through an opening in the linea alba, which forms a ſtrong ligament round it, a ſpongy ſubſtance of extreme vaſcularity, and of an unequal granulated ſurface, about the ſize of half an ordinary nonpareil apple; from the inferior part of which, and equidiſtant from the edges and from each other, emerge two tubes, evidently the ureters, projecting ſomewhat more than the eighth of an inch, and capable of admitting a large crow quill. From theſe the urine exudes, *guttatim;* but occaſionally it is forced into a continued ſtream for a few ſeconds, by the exertions of the child when crying. This circumſtance was however more evident when the ſubject was younger than at preſent.

The ſituations of the external parts of generation are as ſingular as the anatomy of the parts themſelves. The labiæ are not commiſſured, but commence diſtinct and abruptly, with an apex below, though higher than their natural ſituation; and, inſtead of extending to the pubes, they divaricate towards the ſpines of the oſſa ilia, and terminate at about two inches from each other, in broad, prominent, hard, fatty maſſes, covered with the common integuments. The nymphæ partake much of the nature of the labiæ, not being commiſſured, and forming ſmall, ſomewhat triangular irregular bodies (as expreſſed in the drawing), placed conſiderably higher than uſual, and covered with integuments more delicate than the labiæ, but very far from poſſeſſing the uſual fine villous covering. Upon ſeparating the nymphæ, a ſmall, irregular prominence is obſerved immediately under the upper ridge of the pubes, having a faint reſemblance to a clitoris; but, on examination, it is found to be the meatus urinarius, pervious for about half an inch, running in a direction over the pubes, and ending in a cul de ſac. Of a clitoris, no veſtige exiſts.

The vagina is imperforated, and the anus is much more forward than natural, placed preciſely in the uſual ſituation of the vagina. The raphe perinæi, which is rougher and more prominent than ordinary, occupies the whole length from the anus to the ſymphiſis pubis.

The bones of the pubes are united by ſymphiſis, and no deficiency is perceptible. In this particular, the preſent caſe differs eſſentially from moſt of thoſe on record, where the bones of the pubes were conſiderably ſeparate, but united by ſtrong ligaments. The ſacrum, by external examination, appears to be more elongated than uſual, and the os coccygis forms a more conſiderable curve. To this unuſual length of the ſacrum and os coccygis may poſſibly be attributed the very forward ſituation of the anus and external parts of generation; for, had not the anus been thrown forwards, it muſt have interfered with the ſacrum.

The umbilical cord emerged from the abdomen at leaſt two inches lower than uſual, immediately above the protuberance, and through the ſame opening in the linea alba. Shortly after the ligature ſeparated from the cord, the remains of the umbilical veſſels were no longer viſible, having retreated behind the tumour into the abdomen.

From the ſurface of the protuberance, which had much the appearance of glandular ſtructure, was ſecreted a large quantity of lubricating fluid, ſerving to defend it from the ſtimulus of the urine, which, as before ſtated, was conſtantly flowing. The tumour itſelf varied conſiderably, perhaps to more than half its original ſize, according to the exertions of the infant, particularly in crying. At the period of the child's leaving me (by the diſcharge of the father from the regiment), the ſurface of the protuberance ſeemed to have decreaſed, by the encroachment of the cuticle at its upper ſurface and ſides; and I was induced to believe that, with attention and contrivance to prevent the ſtimulating effects of the urine, a conſiderable portion might be defended in the ſame manner. It did not appear to be very ſenſible, ſince neither the handling it rather roughly, nor the paſſing of a probe, of the ſize of a crow quill, up to the kidney, excited expreſſions of pain. Having deſcribed the caſe with as much accuracy as in my power, I beg leave to refer to the drawing, which was taken with tolerable correctneſs, for further explanation.

Although, perhaps, it will be deemed futile to indulge in ſpeculations on Nature's object, in this digreſſion from her accuſtomed track, yet, from the uniformity of ſeveral caſes of the ſame deſcription, and of both ſexes, it would appear evident that they are not merely the effect of chance, but that her object was determinate. If I may be allowed to hazard conjecture, I could ſuppoſe, that at, or ſoon after conception, the anterior portion of the bladder had been deficient; and that the only plan by which this error could be remedied, and the exiſtence of the child preſerved, was the expoſure of the ureters, by thruſting them out of the abdomen, and inverting the remaining portion of the bladder. It will probably be conſidered a ſtretch of fancy to grant Nature the exerciſe of reaſon in her operations; yet many of her exertions imply ſuch a qualification; and although ſhe occaſionally errs altogether, yet her failures ſeem to ariſe from the deficiency of conſtitutional energy of her ſubject, rather than from any miſtake, on her part, in the means intended to remedy misfortunes, or to rectify errors.

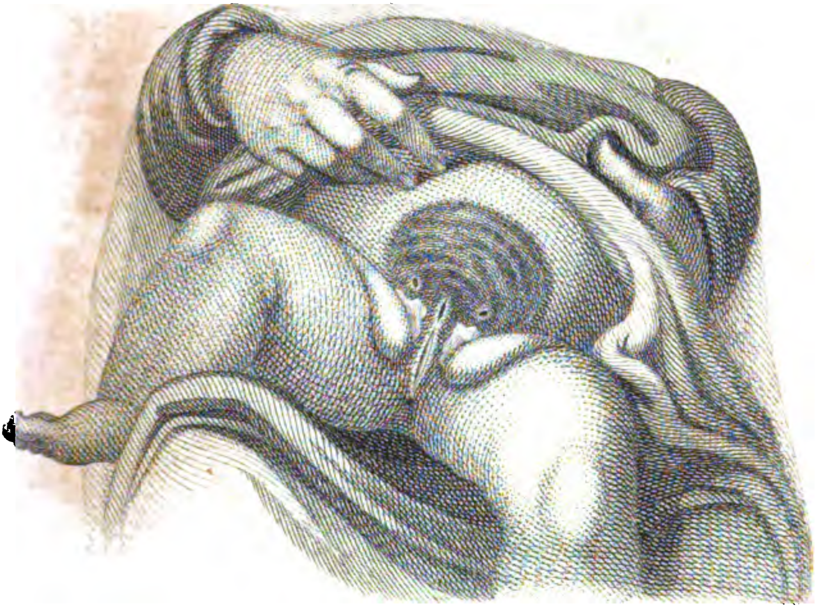
The explanation I have attempted, certainly does not extend to the unnatural appearances of the organs of generation, or impervious urethra, &c. which by ſome may be conſidered as connected with the extraordinary protruſion of the bladder. I can however conſider thoſe appearances but as accidental and ſecondary circumſtances; and am induced to form this opinion, from the great deviation in theſe parts in every caſe deſcribed. I am ſenſible, however, that any attempt to explain the intentions of Nature in theſe very extraordinary deviations, amounts to mere conjecture; but they afford ample food for the ſpeculating phyſiologiſt, and may add, at ſome future period, important improvements to his ſcience, and poſſibly even to Surgery. At all events, the numbers of ſimilar caſes enable us to conſider them as eſtabliſhing a diſtinct claſs of malformation.

Deſcription of the Plate.

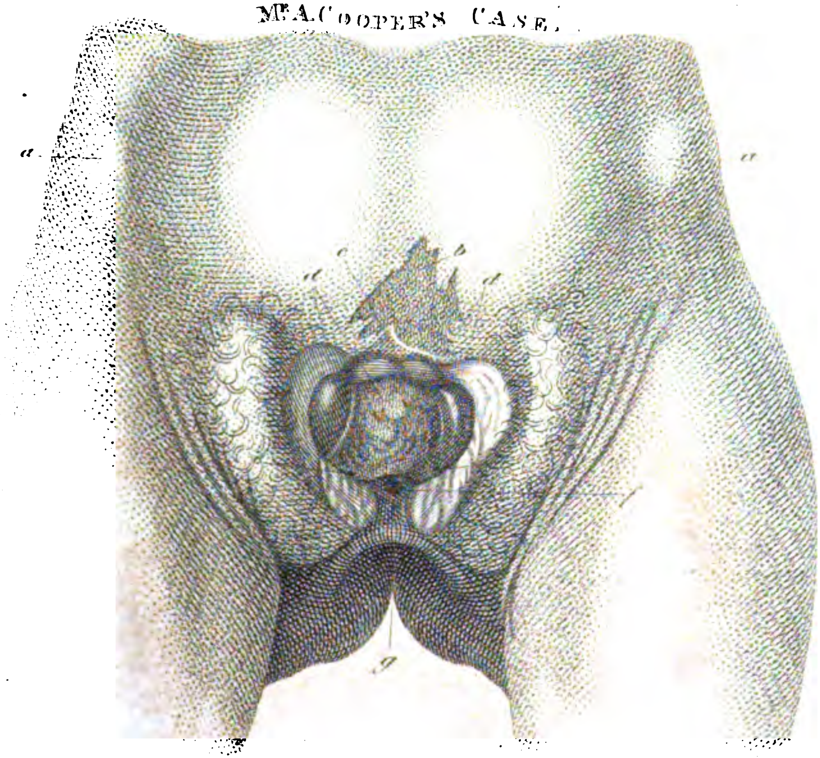
The tumour ſeen in the centre of the hypogaſtric region, is the interior ſurface of the poſterior portion of the bladder, inverted and protruded through the abdominal muſcles and integuments. Behind the centre of the upper edge of this tumour, the umbilical ſcar is concealed. The chink in the centre of the lower edge is the urethra, impervious. At the ſides of this chink are two papillæ, through which the ureters open externally. Below it is the impervious vagina; and, immediately below the vagina, the anus is ſeen thrown remarkably forwards. The two pyramidal tumours at the ſides of the vagina are probably ſubſtitutes for the external labia, and the ſmall triangular bodies within them are probably nymphæ.

Plate 1. p. 4

MR. COATES'S CASE.



MR. A. COOPER'S CASE.



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VI.

An attempt towards a ſyſtematic Account of the Appearances connected with that Malconformation of the Urinary Organs, in which the Ureters, inſtead of terminating in a perfect Bladder, open externally on the Surface of the Abdomen. By Andrew Duncan jun. M. D. Fellow of the Royal College of Phyſicians, and Royal Society of Edinburgh.

THE ſtudy of the various deviations from the ſtructure of the organs of the body, is not only highly intereſting, on account of the curious obſervations connected with it, but often leads to concluſions of real practical utility. They may in fact be conſidered as natural pathological experiments, which enjoy at leaſt this advantage over thoſe performed by art, that, in addition to all the information which may be derived from the latter, they alſo ſhow the manner in which the deviation affects the ſtructure of the neighbouring parts. Their value becomes ſtill greater, if they cannot be artificially performed. Thus, although it might be plauſibly conjectured that the urinary bladder is not eſſential to the life of thoſe animals in which it naturally exiſts, but that it is an organ of mere convenience or comfort, ſtill, however ingeniouſly the opinion might be ſupported, it would only amount to a plauſible conjecture. To demonſtrate its truth, we muſt have recourſe to facts; and, if we were to attempt to obtain theſe artificially, by deſtroying or extirpating the bladder, we ſhould certainly fail in the object of our experiments, and be unable to deduce any ſatisfactory concluſion. But the caſes which are on record, in which both men and other animals have reached old age,[a] and even procreated their ſpecies,[b] although the bladder was wanting, or at leaſt incapable of performing its function, not only demonſtrate that it is merely an organ of convenience, but alſo ſhew that its deficiency is ſo frequently connected with certain other deviations from the natural ſtructure, as to render it highly probable that they are cauſes of each other, or at leaſt that they depend on ſome common cauſe.

The very curious caſe deſcribed by Mr Coates, firſt led me to attend to thoſe morbid alterations of the ſtructure of the bladder, which render it incapable of performing its function. The ſimilar caſe ſo fully deſcribed in a male by Dr Baillie, and that of the German traveller Mathew Uſſem, were both well known in this country; but ſtill the peculiar conformation was generally believed to be very uncommon.[c] On inveſtigating the ſubject, however, I find that the malconformation is far from being very rare, eſpecially in the male ſex;[d] and it now occurred to me, that it might be worth while to attempt to draw up a ſyſtematic account of its varieties. In this taſk my labour was much abridged, by a Gottingen inaugural diſſertation '*De veſicæ urinariæ prolapſu nativo,*' by Dr Rooſe, late profeſſor in Brunſwick; and I was ſtill further encouraged to proceed, by the very handſome and liberal manner in which Mr Aſtley Cooper communicated to me his accurate and ſplendid drawings of a caſe which occurred to him.

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[a] Flajani, 67 years.

[b] Huxham, Oliver, Bonnet.

To render this account as complete as poſſible, in addition to the female caſe already deſcribed, I ſhall give,

1ſt, The hiſtory of a peculiar inſtance in the male.

2dly, A deſcription of the urinary organs.

3dly, Other deviations from the natural ſtructure common to both ſexes.

4thly, A deſcription of the genital organs in the male.

5thly, A deſcription of the genital organs in the female.

6thly, General obſervations.

Caſe of Mathew Uſſem.

I. As an example of the appearances in the male, I have ſelected this caſe, becauſe it has not yet been deſcribed in any Engliſh publication likely to preſerve it; and becauſe, in conſequence of having an excellent caſt before me, taken under the direction of Dr Monro, and the information I have received from ſeveral anatomiſts of this place, by whom he was accurately examined, I am enabled to mention particulars not contained in the deſcription drawn up by profeſſor Bonn of Amſterdam, and to correct the erroneous account publiſhed in the Journal de Medecine by Deſgranges.

He was a native of Cologne, a ſtrong healthy man, of ſmall ſtature, with his thighs much bent outwards, little beard, and an ordinary tone of voice; and when he preſented himſelf for the inſpection of the curious in Edinburgh in 1791, he was about twenty years of age.

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[c] Deſgranges, in 1788, deſcribing the appearances in Mathew Uſſem, calls him an example, 'peut-être unique, de premiere conformation intereſſant pour les parties genitales, qui pour ſa ſingularité merite de fixer l'attention des ſavans.' Many of the other caſes are mentioned nearly in the ſame terms, as if there were no ſimilar caſes on record.

[d] When Mathew Uſſem was in Edinburgh, a male child was born in the ſuburbs having the ſame malconformation; and Dr James Hamilton junior, Profeſſor of Midwifery, informs me that he has ſince met with ſeveral other examples in his practice.

In the region of the pubes, in a conſiderable depreſſion, ſituated between the penis below, two oblique protuberances at the ſides, and the projecting abdomen above, there is a circumſcribed tumour, nearly hemiſpherical, about two inches in diameter, and of a lively red colour. Its ſurface is granulated, and always moiſtened or covered with a white mucus. At the inferior edge on each ſide there is a papilla with a ſmall aperture, from which a tranſparent fluid continually flows, either in drops or in ſmall jets. Through theſe apertures he can introduce a bent blunt probe about four inches upon the left ſide, and almoſt five on the right. Above theſe papillæ the tumour is more prominent, eſpecially on the left ſide, and ſmoother than on the reſt of its ſurface. It appears ſpongy, but has a conſiderable degree of firmneſs; and it is ſaid to have gradually increaſed in ſize, firmneſs, and wrinkling. From not being covered with the common integuments, it is conſiderably ſenſible, but not remarkably ſo, unleſs when rudely touched. In the morning, on getting out of bed, the tumour is leſs, and gradually increaſes in the courſe of the day, eſpecially after fatigue. It cannot be reduced, nor is its ſize diminiſhed by preſſure; except that the knobs above the ureters yield a little; but they ſoon recover their former prominence.

Immediately under this tumour the penis is ſituated. They are ſeparated by a tranſverſe cleft, which is acutely ſenſible, and apparently deep, but on examination it proves ſhallow. The penis itſelf is ſhort, being ſcarcely two inches long, or at moſt three, when in a kind of ſemi-erection—all that it ever attains. Its thickneſs and colour are natural; but the glans, which always remains uncovered, is as if cleft nearly half its depth from above, downwards, and laid open; ſo that its upper ſurface is flat, and of a lively red, being covered only with a ſmooth thin membrane. Between the lobes thus formed, there is a groove reſembling an urethra laid open. At the end of the urethra, next the body, part of the caput gallinaginis was ſeen ſome years ago; at preſent it is covered with the tumour, and there is the appearance of a canal continued inwards. On the upper part of the penis the prepuce is entirely wanting; below there is a ſmall fold of the ſkin reſembling a portion of prepuce connected with the glans by a frænum.

The ſcrotum is large and natural in its appearance, and contains the teſticles, of which the left deſcends a little lower than the right; and the ſpermatic cords may be felt deſcending more obliquely than uſual. Some years ago, before the teſticles deſcended, the ſcrotum had a triangular form, and was pointed downwards.

On each ſide of the tumour there is a conſiderable protuberance. Theſe diverge from the root of the penis upwards; and on examining them, the ſpines of the oſſa pubis may be diſtinctly felt unnaturally ſeparated from each other. By the anus, the ſeparation of the oſſa pubis is ſtill more diſtinctly perceived, the interval being filled up partly by the deformed bladder, and below, where the corpora cavernoſa join the urethra, by a tranſverſe ligament like a cord or thick band.

The ſituation of the umbilicus is alſo uncommon; for inſtead of being in the middle of the abdomen, the cicatrix, where the umbilical veſſels were attached, is found in the hypogaſtric region, connected with the top of the tumour, and a little to the left.

II. *Deſcription of the Urinary Organs.*

The malconformation, the ſubject of the preſent eſſay, conſiſts in the abſence of the anterior portion of the urinary bladder, while the poſterior portion is protruded forward through the muſcles and integuments which commonly cover it, ſo that the ureters open externally, and there is a conſtant involuntary diſcharge of urine through them. Thus, in fact, the interior ſurface of the poſterior portion of the bladder is ſeen externally forming a tumour on the ſurface of the abdomen. This tumour is commonly [a] ſeated very low in the region of the pubes, immediately above the parts of generation, and ſurrounded by a conſiderable depreſſion of the neighbouring muſcles and integuments. [b] Its ſize varies from that of a nut [c] to that of the fiſt. [d] Its ſhape is ſomewhat hemiſpherical, the tranſverſe diameter being in general the longeſt. [e] Its colour is red, either pale and lively, [f] or dark and almoſt liver-coloured. [g] Its ſurface is irregular, being commonly wrinkled, granulated, [h] or tuberculated. [i] In Ten

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[a] In Ten Rhyne's caſe, and in the woman deſcribed by Huxham, &c. the prolapſed bladder occupied the natural ſituation of the umbilicus; and the penis in the former, and the vagina in the latter, were placed immediately below it, and at leaſt as high as the centre of the abdomen.

[b] Mowat, Bonn, Baillie.

[c] Tenon.

[d] Desgranges.

[e] Huxham, Palletta.

[f] Desgranges, Tenon 3. caſe, Warwick.

[g] Devilleneufve.

[h] Desgranges, Warwick, Innes, Tenon 3.

[i] Baillie, Desgranges, Caſtara, Ruyſch.

Rhyne's plate there appears to be a creſcent-ſhaped cleft, dividing it horizontally, which is deſcribed in the explanation as *vulvæ officium ſupplens*. Its appearance is frequently compared to fungous[k] or excoriated fleſh,[l] in which, in one caſe,[m] a number of ſmall glands like millet ſeeds were ſeen. It is, however, commonly covered with epidermis,[n] and when more accurately examined, it appears to conſiſt of ſpongy granulations, with ſmall intervening lacunæ,[o] or to reſemble ſomewhat the poſterior portion of the tongue, but without any follicular appearance.[p] Its ſurface is moiſt, and often covered with mucus to defend it from the acrimony of the urine, exactly as the internal ſurface of the bladder is in common caſes.[q] Its texture is deſcribed as membranous[r] or ſpongy,[s] with a conſiderable degree of firmneſs,[t] or vaſcular and pulpy,[u] or parenchymatous, with glandular pores ſaid to pour out, when cut into, a liquor having a urinous ſmell.[x] The ſenſibility of this maſs ſeems to have been exquiſite in the greateſt number of caſes,[y] in others by no means remarkable.[z] In ſome individuals it was exceedingly ſubject to hæmorrhagy,[a] and in others the acrimony of the urine had produced conſiderable excoriation,[b] and even gangrene.[c]

From the ſurface of the ſpongy tumour there is a conſtant exudation of a limpid fluid. On examination, this is generally diſcovered to proceed from two apertures, which are commonly found on two of the principal tubercles, forming mammillary proceſſes or papillæ. In fetuſes and infants they are placed in the tranſverſe diameter of the tumour,[d] but ſeem gradually to get lower as the child gets older, until at laſt, in adults, they are ſituated in the lower edge.[e] In one caſe only they were obſerved in the upper edge.[f] They are generally placed, ſymmetrically, one on each ſide, at a greater or ſmaller diſtance from each other; but Ten Rhyne repreſents them in the ſame perpendicular line over each other. As, however, he never publiſhed the promiſed detail of his caſe, it is extremely probable that the lower aperture, although called an ureter in the explanation of his plate, was in reality the orifice of the vaſa deferentia and proſtate gland, as it was placed, not in the ſpongy ſurface of the bladder, but between it and the penis, which is the ſituation in which that orifice is commonly found in theſe caſes. In Penchienati's caſe, alſo, they were not placed in a horizontal line, but the one in the centre of the upper edge, which he ſuppoſes to be the urachus ſtill pervious, and the other on one ſide of the tranſverſe diameter. His opinion acquires ſome probability, both from the ſituation and the cloſing of the upper hole ſome time after the child was born, which could not have happened if it had been the orifice of an ureter, although Mowat alſo ſays that one of the ureters in his caſe cloſed up. In the caſe deſcribed by Blaſius, there was but one external aperture, as the ureters united before they penetrated the bladder. Through theſe apertures ſome of the people themſelves were in the habit of introducing bent probes or bougies, to the height of ſeveral inches;[g] and when the paſſage of the fluid through them was obſtructed, either accidentally,[h] or by deſign,[i] the uneaſineſs was very great until the obſtruction was removed, when the urine would ſpout forth with conſiderable force. The man whoſe caſe is deſcribed by Innes, uſed to be at no loſs to clear the paſſage with a bent probe. The flow of fluid through theſe apertures was increaſed by diuretic fluids,[k] and in ſome caſes by crying,[l] exerciſe, preſſure,[m] and by voluntary efforts.

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[k] Bonnet.

[l] Ten Rhyne, Ruyſch, Palletta, Buxtorf, Gockel, Nebel, Rooſe.

[m] Bergen.

[n] Rooſe, Stalpartius.

[o] Palletta.

[p] Baillie.

[q] Devilleneuſve, Desgranges, Rooſe, Anonymous, Baillie, Coates.

[r] Tenon.

[s] Gockel, Mowat, Desgranges, Rooſe.

[t] Desgranges.

[u] Baillie, Deſault.

[x] Gockel.

[y] Gockel, Huxham, Oliver, Bonnet, Deſault, Devilleneuſve, Warwick, Tenon 3. Penchienati.

[z] Goupil, Coates.

[a] Devilleneuſve, Le Sage, Anonymous.

[b] Gockel, Cooper, Mowat, Tenon 3. Le Sage, Flajani.

[c] Ten Rhyne.

[d] Stalpartius 1.

[e] Deſault, Baillie, Palletta, Rooſe, Bonn, Devilleneuſve, Desgranges, Dana.

[f] Buxtorf.

From the mere external appearance it might have been inferred, that the apertures were the mouths of the ureters, and that the ſpongy maſs was a portion of the bladder; but, from the internal examination of ſome caſes of this malconformation, the truth of theſe concluſions has been demonſtrated. When viewed on the inſide, Dr Baillie deſcribes the ſpongy maſs as a ſort of projection, not unlike the poſterior view of the urinary bladder, but ſomewhat ſtronger, and having the two ureters opening through it. Others directly ſay, that it was the poſterior portion of the bladder.[n] Beſides, the ureters have always been traced into it from the kidneys; and Flajani eſpecially remarks, that they did not paſs through it directly, but obliquely, as in the natural bladder; and laſtly, no other veſtige of an urinary bladder has ever been found.[o]

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[g] Baillie, Innes. [h] Mowat. [i] Innes. [k] Devilleneufve.

[l] Mowat, Penchienati.

[m] Highmore, Huxham, Oliver, Bonnet, Penchienati, Bartholinus.

[n] Palletta, Bonn.

The appearance of the kidneys was in general natural. In Littre's caſe, they were perfectly round and granulated like a mulberry, and in Mr Aſtley Cooper's, they were lobulated. In ſome caſes their ſize was greatly increaſed from accidental cauſes, ſuch as collections of pus.[p] In others,[q] however, they were much enlarged, although no ſuch cauſe was obſerved as in Flajani's caſe, who compares the beginnings of the ureters to ſmall bladders. The ureters themſelves ſeem always to have been more or leſs enlarged. In Mr Aſtley Cooper's caſe, they were larger than the rectum. In ſome inſtances,[r] this may have been partly occaſioned, as Dr Baillie ſuſpects, by the frequent introduction of probes and bougies; but it is alſo obſerved in infants or fœtuſes,[s] on whom no ſuch cauſe could operate, and is often much greater than could be occaſioned by it. But beſides the general enlargement of the ureters, and of the pelvis of the kidneys, Nature ſeems to have ſometimes made other attempts to ſupply the want of a bladder, either by lengthening the ureters,[t] or by enlarging them ſo much in particular parts, as to reſemble ſmall bladders.[u] Some conformation of this kind muſt have occaſioned the jet of urine which was obſerved on reducing the prolapſed uterus, in the caſe deſcribed by Huxham, Oliver and Bonnet, and which alone prevented the former from diſcovering the true nature of the luſus; and ſomething ſimilar muſt have exiſted in Highmore's boy,[x] and in all thoſe caſes in which the flow of urine could be increaſed by preſſure or voluntary efforts. The deſcriptions of Le Sage[y] and Littre[z] do not appear to me to warrant Profeſſor Rooſe's aſſertion, that in theſe caſes the ureters croſſed each other; and ſenſation is much too uncertain an indication of the real ſeat of the pain, to allow any certain concluſion in ſupport of it to be drawn from Innes's obſervation.

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[o] Blaſius, Ten Rhyne, Gockel, Murault, Tenon, Cattier, Littre, Nebel, Le Sage, Caſtara, Buxtorf, Flajani, Baillie, Cooper.

[p] Le Sage, right ſide.

[q] Le Sage, left ſide. Littre, Cooper, Murault, Blaſius, Stalpartius, Nebel, Flajani, Baillie.

[r] Baillie, Innes.

[s] Stalpartius 2. Littre.

[t] Palletta, Caſtara, Cooper, Flajani.

[u] Littre, Deſault, Blaſius.

[x] Inferior pars abdominis, ad regionem ſcilicet veſicæ, tumebat et ſæpius ſuper ſaxa eminentia et cellulas procumbere ad ventrem comprimendum, ut inde veſica exinaniretur coactus fuit.

[y] « L'uretre deſcendoit obliquement à gauche, s'entre-croiſoit avec les vaiſſeaux ſpermatiques; delà il paſſoit derrière le méſocolon droit,

III. *Other Deviations from the Natural Structure common to both Sexes.*

Although there is apparently no reaſon why the malconformation of the urinary organs juſt deſcribed might not exiſt in a body otherwiſe perfectly organized, I do not know that any caſe has been met with in which it was not accompanied by other very remarkable deviations from the natural ſtructure. In the preſent Section, I propoſe to enumerate ſuch of theſe as are common to both ſexes.

Of theſe, the moſt remarkable, the moſt conſtant, and that of which many of the others are merely effects, is, that the bones of the pubes, inſtead of being cloſely and firmly united at the ſymphyſis, are ſeparated to a conſiderable diſtance from each other.[a] Although this aberration from the natural ſtructure is not mentioned in ſome of the caſes which ſeem to have been carefully examined,[b] I am inclined to think it actually exiſted, becauſe, in ſome of thoſe caſes in which it is not pointed out in the deſcription, its effects on the general form are apparent in the engraving,[c] and becauſe, in thoſe inſtances which have fallen under the inſpection of the moſt celebrated anatomiſts, and which have been moſt minutely examined after death, it is always particularly noticed.[d] The tumour of the bladder is indeed often deſcribed as being above the pubes;[e] but as, in ſome of theſe, the bones of the pubes were, on diſſection, actually found ſeparated,[f] it would appear that the expreſſion was merely intended to convey an

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traverſoit les circonvolutions des inteſtines grêles, et alloit ſe terminer dans le centre et à la partie inférieure du fongus, vis-à-vis l'epine anterieure et ſuperieure de l'os des îles.'—' L'uretère du côté gauche ſuivoit dans ſa marche la même direction, et les mêmes rapports avec ſes parties voiſines que celui du côté droit, a deux pouces duquel il ſe terminoit dans le fongus.'

[x] Littre expreſsly ſays, that the apertures of each ureter was ſomewhat above the place where the os pubis of the ſame ſide ought to have been.

[a] Baillie, Palletta, Bonn, Rooſe, Deſault, Le Sage, Anonymous, Warwick, Veltkamp, Bonnet, Littre, Huxham, Caſtara, Flajani, Cooper.

[b] Penchienati, Flajani.

[c] Tenon, Ten Rhyne.

[d] Littre.

Anonymous.

[f] Anonymous.

an idea of the ſituation of the tumour, and not to aſſert that the ſtructure of the pubes was natural. Nor are we to ſuppoſe that it is ſo, when, after deſcribing the malconformation of the genital and urinary organs, it is ſaid, in general, that in other reſpects the ſtructure was natural; for the pubes may not have been examined; and in a caſe like the preſent, where the perfect ſtructure is uncommon, it is abſolutely neceſſary that it ſhould be expreſsly mentioned as being the caſe. This is only done by M. Deſgranges and Mr Coates. The caſe deſcribed by the former is that of Mathew Uſſem; but every one, I apprehend, who compares his account with that of Profeſſor Bonn, will be ſatisfied that he is miſtaken. The Amſterdam Profeſſor's deſcription was completely verified by the examination of the anatomiſts in this place. In this particular, therefore, Mr Coates's caſe appears ſingular; but as the ſeparation may exiſt in various degrees, and the examination here was only external, even this cannot be confidently ſtated as an exception.

The effects of this ſeparation of the bones of the pubes, are, to render the pelvis larger[g] and flatter;[h] to ſeparate the acetabula and thighs farther from each other,[i] rendering the gait of the perſon leſs firm,[k] the lateral motion greater, and the progreſs ſlower;[l] to ſtretch the ſcrotum tranſverſely, and to ſhorten it;[m] to cauſe the ſpermatic veſſels to deſcend more obliquely; to throw the ſpine of the pubes forwards, ſo as to form projections at the ſides of the protruded bladder;[n] to ſeparate the anterior ſpines of the ilia,[o] and to render them more protuberant;[p] to ſeparate the recti-muſcles from each other, ſo that there is an intervening ſpace filled only with tendon and peritonæum;[q] to cauſe the corpora cavernoſa penis to riſe at a greater diſtance from each other, and therefore to proceed tranſverſely[r] and to a greater diſtance before they unite, ſo that the penis is much ſhortened;[s] and laſtly, probably to enlarge and weaken the abdominal ring, giving riſe to frequent hernia.[t] The ſpace intervening between the bones of the pubes is not filled up by cartilage,[u] but by a broad ligamentous membrane, which ſerves as a ſupport to the viſcera of the abdomen,[x] and which, in ſome caſes, was ſo very ſtrong, and had the ſkin ſo firmly attached to it, that the gait was almoſt natural.[y] Beſides the ſeparation of the bones of the pubes in

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[g] Palletta.
[h] Mowat.
[i] Littre.
[k] Palletta.
[l] Baillie.
[m] Baillie, Palletta.
[n] Palletta.
[o] Default.
[p] Palletta.
[q] Penchienati, Baillie.
[r] Palletta.
[s] Baillie.
[t] Palletta, Baillie, Tenon, Devilleneufve, Le Sage, Anonymous, Warwick, Dana.
[u] Palletta.
[x] Baillie.
[y] Default.

Littre's caſe, the whole bones of the pelvis were convex inwardl and concave externally.

In the region of the pubes, there ſeems to have been a con derable tendency to the accumulation of fat, particularly in th direction of the ſpermatic veſſels, giving the appearance of he nice,[a] or forming oblong ſwellings[b] or tumours.[c] In many in ſtances, theſe lateral prominences were principally owing to th projection of the ſpines of the pubes.[d] The pubes, in ſome in ſtances, was thinly,[e] in others plentifully,[f] adorned with hai The ſame difference took place with regard to the beard of th males, whoſe voice was alſo, in general, ſtrong and maſculine.

The anus and rectum were ſometimes natural;[h] but moſt com monly the anus was thrown remarkably forwards;[i] ſo that th perinæum was very much diminiſhed in breadth, or was even a together wanting.[k] On the contrary, but only in a ſolitary ex ample,[l] the diſtance between the anus and ſcrotum has been o ſerved to be unuſually great. In the boy whom Goupil examine the anus was ſo narrow, that he could not go to ſtool witho very great pain, and could not paſs any thing in a ſitting poſitio but was obliged to ſtand or lye. Between his bladder and pen there was alſo a tranſverſe aperture, through which he paſſed fet air, but never any fæces. But of all the caſes which have o curred, that of Bartholinus[m] is certainly the moſt extraordinary and indeed it appears almoſt incredible, that a man ſhould li forty years with an imperforated anus, ſubjected to the miſery evacuating his fæces, in a ſtate of the higheſt fœtor, from time time, by vomiting. The rectum was ſometimes natural,[n] ſom times much ſmaller than uſual, even not larger than the ſmall i teſtines,[o] and ſometimes it was much enlarged.[p] In Deſaul caſe, it reſembled a natural urinary bladder in a ſtate of diſte ſion; and in that diſſected by Littre, there was no colon, cœcu or rectum, but the ilium terminated in a fleſhy pouch, from which a very narrow tube paſſed to the anus. Where the anus is thrown forwards, the rectum forms a large curve in the pelvis, ſo that the bladder does not lye upon it, but forms a right angle with it.[q]

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[a] Devilleneuſve. [b] Baillie, Tenon 1. Gockel, Rooſe.

[c] Nebel, Coates, Mowat. [d] Palletta, Bonn, Anonymou

[e] Innes, Huxham. [f] Palletta, Tenon 3.

[g] Desgranges, Le Sage, Devilleneuſve. [h] Baillie.

[i] Palletta, Huxham, Bonnet, Warwick, Littre, Tenon, Roo Goupil, Coates. [k] Buxtorf, Burns. [l] Mowat.

[m] Notanda in hoc prudentis Naturæ providentia, quæ certis qu quam obſtaculis impedita et anum pervium negaverat et ductum uri rium, alio tamen medio viri neceſſitatibus conſuluit. Nempe durio alvi fæces certis periodis finitâque ventriculi concoctione, per cornu impoſito evomuit, quarum fœditatem ſaporiſque moleſtiam grato po aquâve diluit, quam in hunc uſum perpetuo ſecum circumferebat.

[n] Baillie. [o] Le Sage, Cooper. [p] Ten Rhyne.

Another remarkable and common occurrence in theſe caſes, was the unuſually low poſition of the umbilicus; for in very few inſtances[r] only did it occupy its natural ſituation. Moſt commonly[s] it was placed in the hypogaſtric region, in the upper edge of the protruded bladder, with which in ſome inſtances it was ſo blended, that ſcarcely any veſtiges of it could be diſcovered after it had cicatrized; and as the birth of ſome of theſe caſes did not fall under the inſpection of profeſſional men,[t] or the connexion with the placenta had been deſtroyed during delivery, or previous to it,[u] they have been adduced as proofs that the foetus may live and be well nouriſhed in the uterus, although not connected with it by a vaſcular cord.[x] But the facts are ſo contrary to experience and obſervation, that they can ſcarcely be ſuppoſed to be correct, and would require ſtronger evidence to ſubſtantiate them than the report of an ignorant midwife, or vulgar credulity, ſupported by the abſence of the umbilical ſcar from its uſual place. On the contrary, in every inſtance which fell under the obſervation of intelligent profeſſional men at the time of delivery, the umbilical cord connected the child with the mother as uſual; and, whenever they have been examined after death, the remains of the umbilical cord have been found, and generally traced to the upper edge of the back part of the bladder, where they were loſt behind a plait or caruncle which was obſerved at the external ſurface of the ſkin at that place;[y] and in the other inſtances, a ſimilar fold, plait, or caruncle of puckered ſkin was formed, leaving no doubt of its being the umbilical ſcar.[z] On the contrary, had Littre's boy ſurvived its birth, there would have been two umbilical ſcars, as the veſſels paſſed out of the abdomen ſeparately.

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[q] Palletta, Le Sage.

[r] Warwick, Nebel, Ten Rhyne.

[s] Gockel, Cattier, Stalpartius 2. & 3. Caſtara, Saviard, Veltkamp, Bonnet, Tenon 1. Mowat, Dana, Baillie, Rooſe.

[t] Deſgranges, Huxham, Devilleneuſve.

[u] Stalpartius, Dana.

[x] Stalpartius, Deſgranges. The teſtimony of the former is the moſt poſitive on this ſubject. He ſays, 'Hic uterinis carceribus ſolutus in lucem ſine ullo, ne minimo quidem funiculi umbilicalis indicio prodibat, quem idcirco obſtetrix in partu a ventre ſeparare neceſſe non habuit. Deerat etiam umbilicus.'

[y] Stalpartius, Deſault.

[z] Devilleneuſve, Anonymous.

In conſequence of the unnaturally low ſituation of the umbilicus, the umbilical arteries and urachus are rendered proportionally ſhorter, and the veins longer, than in the natural ſtructure.[b] In the caſe examined by Littre, the courſe of the umbilical veſſels was ſo curious in general, that although not ſtrictly connected with the ſubject of the preſent paper, it deſerves perhaps to be noticed. The umbilical cord was two thirds ſhorter than uſual. There was only one artery, which aroſe from the right iliac, and paſſed out of the abdomen in the middle of the hypogaſtric inſtead of the umbilical region. Nor did the vein accompany it as uſual, but ſeparated from it about two inches before it reached the abdomen, which it entered at the top of the left groin; ſo that if the infant had lived, it would have had two umbilical ſcars. After entering the abdomen, the umbilical vein run up along the left ſide, reſting on the pſoas muſcle; it then croſſed the diaphragm at the ſide of the laſt dorſal vertebra; and after having made ſeveral turns in the inferior part of the thorax, it terminated in the middle of the cava ſuperior, having received in its progreſs the two iliacs, the lumbars, the two emulgents, the vein of the left renal capſule, and the left diaphragm. The inferior cava was much ſmaller than ordinary, as it was only compoſed of the branches ariſing from the left renal gland, the liver, gall bladder, and the right part of the diaphragm. The trunk of the ſuperior cava was about one half larger than uſual, as it received the umbilical vein, which, in this inſtance, performed the function of the inferior cava. As the fœtus was well grown, and reached its full time, the diſtribution of the veſſels is an additional proof that it is not neceſſary that the umbilical vein ſhould terminate in the vena portæ, or that its blood ſhould circulate through the liver before it reaches the heart.

Sexual-Organs of the Male.

Upon the moſt ſuperficial external examination, the aberration from the natural ſtructure of the penis is abundantly evident. In a great majority of caſes, its ſhortneſs, its bifid appearance, its breadth at the root, its being impervious, and the deficiency or total abſence of prepuce, are all remarkable.

Theſe deviations preſented conſiderable varieties, although generally they were of the ſame kind. In one circumſtance they all neceſſarily agreed, viz. the imperforation of the penis, as there was no cavity in the bladder to which the canal of the urethra could lead. Except in the circumſtances of being imperforated, and the abſence of a prepuce, the penis in Littre's caſe ſeems to have been perfect.[e] The extreme ſhortneſs of the penis was alſo very generally remarked. Even in the adult it ſeldom exceeded too inches in length. This was not ſo much owing to actual ſhortneſs of the corpora cavernoſa, as to a larger proportion of their length being concealed within the body, in conſequence of the increaſed diſtance of the tuberoſities of the oſſa iſchii to which they are attached. For the ſame reaſon they aſcended a conſiderable way before they united;[f] or, proceeding in a tranſverſe direction,[g] or directly toward the fungus,[h] they terminated as ſoon as they united. The urethra ſeemed as if it had been ſlit open, thus forming a band or groove inſtead of a perfect canal, and rendering the glans penis bifid.[i] That this band was really an imperfect urethra, was evident from its general appearance, from its vaſcular lining with lacunæ opening into it, and indiſputably by the preſence of the foſſa navicularis and caput gallinaginis, with the openings of the veſiculæ ſeminales.[k] Beſides, by bringing the lobes of the glans together, it was poſſible, as in Mathew Uſſem's caſe, to give it the form of a perfect glans, with the urethra opening through its point as uſual. The ſituation of the urethra was alſo very remarkable; for in very few inſtances only[l] does it ſeem to have run, as it naturally does, in the lower angle formed by the junction of the corpora cavernoſa, but commonly in the upper[m] angle, giving the penis and the glans[n] the appearance of being inverted. In the texture of the glans nothing remarkable ſeems to have been obſerved except the thickneſs of its cuticle, and this was probably owing to its never being covered by a prepuce, which was either entirely wanting,[o] or very deficient, and when large enough, it was often unnaturally thickened, and never covered the glans, but was attached only to the lower half of it, from which it hung down in the form of a creſcent. The prepuce was always connected to the glans by a frænum, which ſometimes was prolonged, biſected the glans, and connected it with the fungus;[p] or, taking an oppoſite direction,

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[b] Deſault, Gockel, Littre.

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[e] Elle etoit dure, droite, et telle qu'elle eſt dans le tems de l'erection et compoſée du gland, de deux corps caverneux, et de l'uretere. Le gland n'avoit ni prepuce ni trou. Il etoit ſolide de meme que le reſte de la verge.

[f] Baillie. [g] Palletta. [h] Deſault.

[i] Stalpartius, Mowat, Devilleneuſve, Rooſe, Tenon, Bonn.

[k] Deſault, Bonn, Palletta, Stalpartius, Cattier, Flajani, Michaelis, Soemmerring. [l] Stalpartius 3. Innes. [m] Uſſem, Baillie, Tenon.

[n] Stalpartius 1. & 2. Devilleneuſve. [o] Stalpartius 1.

[p] Warwick, Stalpartius 1.

bound the prepuce back on the ſcrotum.[p] In a few caſes, the deviation from the natural ſtructure was much greater. In Ten Rhyne's plate, what he deſcribes as a dactyliform imperforated protuberance, appears to have been the penis probably bifid with a thickened prepuce. In Tenon's firſt caſe, the penis was imperforated and divided at its extremity as if into two heads, the one formed by the corpora cavernoſa and the other by the glans. In Le Sage's caſe it was alſo extremely unnatural. It was not more than an inch and a half in length, and conſiſted of two convoluted folds, one above the other, flattened horizontally, and covered with warty excreſcences. Where they were in contact with each other, they formed a chink like the os tincæ, and, on ſeparating its lips, a frænum was obſerved connecting them. This penis had only one corpus cavernoſum, no urethra, no appearance of a glans, and was imperforated. Sometimes there was no appearance whatever of a penis. Thus, in Highmore's boy,[q] all was entire and ſmooth, from the fungus to the anus; and, in Tenon's ſecond caſe, although the teſticles were contained in cuticular folds, reſembling the external labia of a female, the penis was entirely wanting, and there was no aperture between the bladder and the anus.

Dr Baillie found the iſchio-cavernoſi and bulbo-cavernoſi nearly natural in their appearance; but the tranſverſe perinæi were ſeven or eight times larger than uſual. In Deſault's caſe, the iſchio-cavernoſi had their common direction; but the bulbo-cavernoſi were exactly tranſverſe. In Flajani's caſe, both the iſchio and bulbo-cavernoſi were wanting.

The teſticles ſeem always to have been natural, except that in a few caſes they were rather ſmall.[r] In ſome inſtances they were contained in the ſcrotum;[s] in others they had not deſcended, although there was a ſcrotum;[t] and, again, in ſome there ſeemed to be no ſcrotum.[u] In Deſault's caſe they were contained in two folds of the ſkin near the pubes, reſembling, in their figure and ſituation, the external labia of a female; and, in Tenon's non's ſecond caſe, from the abſence of penis and ſcrotum, the ſimilarity was ſtill more ſtriking. Devilleneufve thought that, in his caſe, the deſcent of the teſticles was prevented by the conſtriction of a portion of ſkin upon the os pubis as if by a band. In Palletta's caſe, on the right ſide, the aperture in the peritonæum, through which the teſticle deſcends in the fœtus, was ſtill open, and there was a free paſſage of conſiderable ſize between the ſcrotal and abdominal cavities, through which a portion of the omentum paſſed and adhered to the teſticle, forming a congenital hernia. For from the natural appearance and undiſturbed ſituation of the ſtomach and inteſtines, Palletta concluded that the adheſion had been formed when the teſticle was ſtill in the abdomen, and that the omentum had been drawn down along with it. In Dr Baillie's caſe, there was alſo an omental hernia of the right ſide, and the tunica vaginalis on both ſides was almoſt obliterated.[x] The cremaſter muſcles were alſo remarkably ſtrong.

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[p] Stalpartius 3.

[q] 'In quo a partu nullæ unquam apparuerunt partes quibus ſexus diſtingui potuit, ſed omnia glabra et nitida uſque ad anum apparuerunt.'

[r] Deſault, Innes.

[s] Gockel, Stalpartius 2. Dana, Le Sage, Anonymous, Stalpartius 1. & 2. Cattier, Cneulinus, Veltkamp.

[t] Mowat, Devilleneufve, Deſault, Warwick, Ten Ryne, Tenon 3.

[u] Ten Rhyne, Littre, Tenon 2.

The ſcrotum itſelf, from the ſeparation of the bones of the pubes, was ſo much diſtended in breadth as to be rarely pendulous, but rather to form a creſcent-ſhaped appendage to the perinæum.[y] It was often very much wrinkled,[z] or even corrugated,[a] without much appearance of raphe. Dr Baillie obſerved that the cellular membrane was not ſpongy as uſual, but of a very firm compact texture; and that the ſeptum dividing it into lateral cavities was remarkably ſtrong.

The proſtate gland was either natural, or indurated,[b] or ſmall,[c] or wanting.[d] The veſiculæ ſeminales alſo were either natural,[e] or ſmall,[f] or wanting.[g] They were either attached to the bottom of the back part of the bladder,[h] and occupied their uſual ſituation between the bladder and rectum,[i] or they were placed immediately below the kidneys, and adhered to their infundibula.[k] The epididymis ſeems always to have been natural, and to have terminated in the vaſa deferentia. The termination of theſe, however, was exceedingly various. In ſome caſes their extremities were enlarged as uſual, or even ſo much ſo as to reſemble veſiculæ ſeminales, and, joining with the ducts of the veſiculæ ſeminales, they opened externally either in the uſual place in the urethra,[l] or in a ſmall tubercle forming the root of the penis,[m] or in the lower edge of the bladder itſelf,[n] as in Dr Baillie's caſe, in which their orifices were placed on each ſide of a conſiderable opening leading to the proſtate gland. In ſome caſes, where there were no veſiculæ ſeminales, they alſo opened externally in a caruncle between the penis and bladder.[o] In that deſcribed by Littre, they terminated in the ureters, near their external apertures. They were, in other caſes, impervious. In Tenon's firſt caſe, he traced them into ſome membranes in the bottom of the pelvis, which ſeemed to have no connexion with the external parts; and, in his ſecond caſe, they terminated upon the external iliacs in a hard white tubercle, in which he could diſcover no cavity.

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[x] The tunica vaginalis in Flajani's caſe was alſo wanting.

[y] Deſault, Innes, Stalpartius 1. Dana.

[z] Devilleneufve, Warwick.

[a] Tenon 3. Ten Rhyne, Mowat.

[b] Flajani.

[c] Baillie.

[d] Deſault, Littre, Tenon 2.

[e] Deſault, turgid with ſemen. Ten Rhyne.

[f] Deſault, Baillie.

[g] Littre, Tenon 2. Flajani, Stalpartius 2.

[h] Palletta.

[i] Baillie.

[k] Le Sage.

The ſexual appetite in ſome of the adults was ſtrong,[p] in others weak,[q] and in others altogether wanting.[r] From the malconformation of the penis it is evident that none of them were capable of procreating the ſpecies.

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[l] Default.

[m] Cattier, Stalpartius 2. Veltkamp, Cattier.

[n] Le Sage.

[o] Stalpartius 2.

[p] Baillie, Bartholinus, Veltkamp, with emiſſion of ſemen from a hole placed betwen the penis and bladder. Mr Thomſon, Profeſſor of Surgery in Edinburgh, alſo ſaw a man from the Iſle of Mull who had erections attended with excruciating pains, which were only relieved by nocturnal emiſſions.

[q] Innes, Michaelis.

[r] Rooſe, Devilleneuſve.

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Engravings.

Ten Rhyne, Gockel, Stalpartius, Vander Wiel, Mowat, Berger, Warwick, Tenon, Buxtorf, * Veltkamp, Caſtara, * Flajani, Dana, * Bonn, Rooſe, Baillie.

Thoſe marked * I have not ſeen. They were quoted on the authority of Profeſſor Rooſe, or of the Leipſic Commentaries.

[*N. B.* To be continued in the next Number.]

VII.

VII.

A Caſe of Catalepſy, with ſome Remarks on that Diſeaſe.

By Richard Lubbock, M. D. of Norwich.

About twenty months ago, Mr W—— of M——, the apothecary who attended X. Y., a lady who is the ſubject of this detail, wrote to me, and gave me the particulars of a complaint, appearing to him ſingular and anomalous, which has more or leſs continued to trouble her at intervals ſince that time. His account was, that X. Y., without any previous indiſpoſition, was ſuddenly attacked, while at work or reading, with an appearance of inſenſibility, and loſs of motion of the purely voluntary muſcles for ſeveral minutes, although at the ſame time ſhe remained perfectly conſcious of every thing paſſing around her; without any feeling of ſickneſs or faintneſs, the colour of the countenance being unchanged, and in no degree different from what it was in the moſt perfect health. At that time there was no irregular or convulſive motion in any part of the body; and after remaining a ſhort time motionleſs, and to appearance inſenſible, and at times without the power of ſpeech, or of expreſſing her wants or wiſhes by any kind of ſign, ſhe would in an inſtant reſume her activity, without any feeling of bodily or mental inconvenience from what had juſt taken place.

During theſe attacks, the limbs were for the moſt part flexible; but now and then ſome degree of rigidity took place. At firſt, the attacks recurred but ſeldom, about once in a week; but afterwards they happened more frequently, and would equally take place whether the lady was walking or ſitting. When the attack took place in the act of walking, ſhe never injured herſelf by the fall, but, to uſe her own expreſſion, ſhe ſeemed to make a ridiculous diſplay of eaſe and grace in falling. From the foregoing detail, I had but little heſitation in ſaying, that theſe attacks partook of the nature of Catalepſy; and, with that view, I preſcribed Vol. Alkali, Ether, the fetid Gums, preparations of Steel, of Zinc, and of Copper, and Bark and Valerian in ſubſtance, and Opium, &c. After ſome weeks paſſed in the uſe of the foregoing medicines, the acceſſions diſappeared for two or three months, and X. Y. appeared to enjoy perfect health. But how far this diſappearance was to be aſcribed to medicine as ſuch, remained doubtful. After the time mentioned, and upon the return of the complaint laſt Autumn, X. Y. wrote to me again, requeſting my farther aſſiſtance, and ſtating that the attacks were of the ſame nature and character as before, excepting that ſometimes they ſeemed to be induced by little occurrences, ſuch as very ſudden noiſes, or the unexpected viſit of a friend. Theſe circumſtances ſeemed to ſhew ſome admixture of hyſterical affection. She was then deſired to take ſome preparation of Steel and Bark and Valerian in ſubſtance. Theſe medicines producing no particular advantage, ſhe went to the ſea ſide, with a view to bathing and the ſea air, which procured temporary relief. The attacks, however, continued to return at intervals, with ſome variation of ſymptoms, ſuch as the inability of opening the eyelids, and loſs of ſpeech for many hours together, although poſſeſſing every other power in the ſame degree as in health. In this way X. Y. paſſed the laſt winter, experiencing ſimilar acceſſions at uncertain intervals. But during laſt January or February, as I had never ſeen her in any of theſe attacks, ſhe was induced to come from the country for a few weeks, to be more immediately under my direction, and to give me an opportunity of ſeeing the complaint. Upon my name being announced at my firſt viſit, an occurrence of the diſorder took place—ſhe fell back upon the ſofa, and remained motionleſs for ſome minutes, the pulſe being undiſturbed and regular, the colour of the countenance natural, and the reſpiration unaffected; and from this ſtate ſhe recovered in an inſtant, as if nothing had happened, and in full poſſeſſion of the powers of body and mind. During the time ſhe was under my immediate care, I frequently witneſſed ſimilar paroxyſms when ſhe was ſeated, accompanied with rigidity of all, or of one or more of the extremities, and for a longer or ſhorter period, the limbs remaining in the poſition in which the ſeizure took place; and this poſition would immoveably remain the ſame, although, during the ſeizure, ſleep ſhould ſupervene: at times it happened, that the cataleptic ſtate would come on during ſleep. Thus, I have known one of the upper extremities caught nearly at right angles with the trunk of the body, at the inſtant of the attack, when X. Y. has been awake; and, ſleep coming on during the ſeizure, the limb has retained the ſame poſition till the diſſolution of the attack. I have alſo ſeen the complaint come on as ſhe was walking acroſs the room, when ſhe would remain ſtanding and motionleſs, with rigidity of the lower limbs for ſome time, but retaining frequently the uſe of the arms, and the power of ſpeaking.

I have ſeen the ſame rigidity ſuddenly affect the muſcles of the head and neck, upon the head being turned towards the ſhoulder to obſerve a perſon entering the room, in which poſition it would remain fixed for ſome time; and I have known the ſpeech leave her entirely for forty-eight hours, although, during that time, ſhe was able to walk three or four miles without fatigue. Indeed, the foregoing attacks ſcarcely ever prevented her from taking daily exerciſe, as, after they went off, ſhe never felt any marked inability of exertion. And to this liſt of irregularities of the influence of volition over the muſcles, I may add, that at times ſhe has been free from every other ſymptom of the attack, but the entire inability of ſhutting the eyelids; and at one time, for a few days, there ſeems to have been ſomething of the irregularity of the motion of the extremities that characterizes St Vitus's Dance, but which ſoon went off.

When in Norwich, X. Y. tried large doſes of Volatile Alkali, Galbanum, ſmall doſes of Calomel, and ſome preparations of Steel, without any advantage; and ſhe tried the Tincture of Digitalis as an antiſpaſmodic; and alſo, by way of interrupting the wonted ſucceſſion of the actions of the body, a ſtrong Emetic was given, but with apparent diſadvantage. I cannot ſay that ſhe returned home much, if at all benefited; for, ſince her return, the complaint has occurred at uncertain intervals, and ſhe had recourſe to Electricity as a ſource of probable relief, but without benefit.

During the laſt two or three months, ſhe has been travelling through different parts of England, keeping her mind conſtantly and agreeably occupied, by frequent change of delightful and intereſting ſcenery, and thus withdrawing her attention as much as poſſible from the apprehenſion of a viſit from her troubleſome and fantaſtic complaint. This plan has been productive of apparent advantage; for, during theſe laſt two months, ſhe has experienced only one or two very trifling attacks of her complaint.

I ſhall conclude this detail by remarking, that X. Y. is about thirty years of age, unmarried, has blue eyes, a complexion rather fair than florid, and hair of a light brown colour. There has never been any irregularity in the menſtrual diſcharge, nor has ſhe ever ſuffered from any habitual irregularity of the bowels; ſhe has never been haraſſed by hyſterical complaints; and her mind is characterized by that deſirable compoſure and firmneſs which is little favourable to attacks of this nature, or to ſpaſmodic affections in general.

Many and curious are the ſpeculations ſuggeſted to the mind, by reflecting on the phenomena of the preſent and ſimilar caſes. It may be queſtioned, whether Catalepſy has been correctly arrenged by Sauvages and Cullen, under the order *Comata* in the claſs *Neuroſes*. There is one general fact to be collected from all ſuch caſes, which is, that the cauſe of theſe phenomena is intimately connected with that faculty of the mind termed *Volition*. And what is remarkable and meriting attention, the ſame kind and degree of action, whether of flexion or extenſion, that this power called volition is exerting over the voluntary muſcles at the moment of the acceſſion, is immoveably preſerved till the termination of the attack. Thus the diffuſive current of volition is, as it were, ſtopt or frozen up, and its courſe through the muſcles becomes fixed, and remains preciſely in the ſame ſtate, till the ſpell that fetters its influence is diſſolved, and the ſeizure goes off.

I am aware, that the phenomena occurring in caſes of Catalepſy, have appeared ſo ſtrange and inexplicable to ſome medical men of great judgment who have never ſeen the diſeaſe, (among whom *Dr Cullen* may be mentioned), as to have created ſome doubt and ſuſpicion about their reality. Of their exiſtence, however, my individual experience has given repeated proof; and I may remark farther, that this affection is by no means confined to the female character, as I have ſeen two ſtrongly marked caſes in males. Neither does it occur particularly in hyſterical habits, or where great ſuſceptibility of impreſſions predominate; on the contrary, a degree of ſlowneſs to action, or inirritability of the ſyſtem, ſeems to have accompanied the caſes, and marked the character of thoſe that have fallen under my care. Theſe remarks are peculiarly exemplified in the character of X. Y., whoſe fibre by nature is endowed with no great mobility, who poſſeſſes great ſedateneſs and calmneſs of mind, and with whom a correct education has extended the empire of reaſon to a great degree, ſo as to protect her from thoſe morbid aſſociations that have been deemed ſufficient to conſtitute the hyſterical character, and even to form complaints of a convulſive nature. In this caſe, too, the ſtrong affections of mind, as exciting cauſes of diſeaſe, were ſilent and inactive.

November 1804. R. L.

VIII.

A Caſe of Enteritis; with Remarks. By Mr James Rumſey of Amerſham, Member of the Royal College of Surgeons, London, and of the Royal Medical Society of Edinburgh.

In November 1802, R—— B——, an athletic farmer, aged 25, was taken ill with ſevere pain of the belly, which was tenſe and ſore to the touch;—vomiting, and fever, the bowels being conſtipated. Repeated doſes of Calomel and Saline purgatives were given to him, without effect. The ſecond day of his ilneſs,

neſs, he appeared much worſe. Every thing was rejected from the ſtomach; and enemata produced no relief. He was then bled by the arm to the extent of nearly thirty ounces (the blood being very ſizy), which was immediately followed by univerſal ſweat and faintneſs; and within an hour he had a very copious fæcal evacuation. The diſeaſe appeared to be at once ſubdued, all the ſymptoms quickly diſappearing, although they had previouſly been exceedingly ſevere. That he might ſuffer no relapſe, a large bliſter was applied to the abdomen, and ſtrict abſtinence was at the ſame time enjoined. But no return of any ſymptom happened.

It might perhaps be thought preſumptuous to ſuggeſt any variation of the treatment of a ſerious diſeaſe from the reſult of a ſingle caſe. Enteritis, however, is neither ſo uncommon a diſeaſe in itſelf, nor is it ſo unfrequently followed by a fatal event, but that the mention of any circumſtances which place its treatment in a new light may be of uſe. The direct and immediate ſucceſs of a copious bleeding, in the preſent inſtance, in which the other remedies could not be ſuppoſed to have any part, is the circumſtance which I here propoſe for conſideration. It is known that, in the uſual order of proceeding in caſes of Enteritis, purgative medicines are thought eſſential to the plan; and bleeding, though conſidered as of the greateſt importance, is not always ſo employed as to produce a powerful impreſſion upon the ſyſtem at large. But, would not the entire omiſſion of the former, and a more vigorous uſe of the latter, with its auxiliaries, conſiſt better with our real notion of the nature of the diſeaſe? We believe it to be a ſimple inflammation of parts endowed with great ſenſibility, and in which inflammation cannot take place without an interruption to their functions. We know alſo that, in other inflammations, all things are carefully avoided which might irritate or increaſe the actions of the parts affected. Conſtipation is a neceſſary effect of inflammation of the bowels, as vomiting is of Gaſtritis. The principle of diſeaſe, the cauſe of all the ſymptoms, is in both the ſame; yet we do not expect to cure Gaſtritis by an emetic, though that may in ſome inſtances be neceſſary for the removal of the exciting cauſe. Probably the attention therefore ought to be directed entirely to the ſubduing of the inflammation, without regard to the conſtipation, which will end with the inflammation, and which may be called an accidental ſymptom, and, comparatively with its cauſe, of ſmall importance. For although the bowels cannot be long inflamed without the greateſt danger to life, conſtipation of itſelf often continues many days without ſerious inconvenience. It may be ſaid that an accumulation of fæces in the bowels, although not the cauſe of Enteritis, may aggravate the ſymptoms, and that therefore purgative medicines are neceſſary. Certainly it would be better to have the bowels free, if this could be obtained without a riſk of failure. But the queſtion here aſked is this: As the effect of purgative medicines in Enteritis is by no means certain, and as the bowels are incapacitated from the performance of their functions by *inflammation alone*, would it not be better to avoid whatever muſt do harm if its intention fails, and to rely ſolely on the common means of removing inflammation? With this view, veneſection *ad deliquium*, the warm bath, the application of leeches, and afterward of bliſters, to the abdomen, with as complete abſtinence as poſſible, not only from nutritious matters, but even from the thinneſt liquids, uſed according to the violence of the diſeaſe, would afford perhaps a reaſonable proſpect of ſubduing Enteritis.

Note on Mr Rumſey's Caſe.

As ſome caſes have occurred within the knowledge of the Editors, which were of a ſimilar nature, and tend to corroborate the concluſions of Mr Rumſey, they have conſidered this caſe as not of ſolitary authority. The inferences of ſucceſsful practice, as well as of rational theory, ſuggeſt that the conſtipation, which is the effect, and not the cauſe of the diſeaſe, ſhould not be the ſymptom firſt attended to, and that additional irritation ſhould be cautiouſly added to a membrane in a ſtate of acute inflammation, before the means of ſubduing it have been vigorouſly uſed.

PART II.

CRITICAL ANALYSIS.

I.

Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever and Febrile Diſeaſes, whether applied to the Surface of the Body, or uſed internally. By James Currie, M. D. F. R. S. Phyſician in Liverpool, and Fellow of the Royal College of Phyſicians, Edinburgh. Vol. II. Third Edition. Liverpool, 1804.

At the commencement of our Analyſis of Books, it is with pleaſure we undertake to give ſome account of one of the moſt valuable which has ever been publiſhed. The firſt volume of *Dr Currie's Medical Reports* muſt be familiar to all our readers: the opinions it contains, the practice it inculcates, and the enlightened views which it diſplays, muſt have rendered it a favourite work with all thoſe who look forward with confidence and zeal to the advancement of medical knowledge. It is unneceſſary to give any abſtract of the well-known contents of the firſt volume. The additional matter conſiſts of two new caſes of *Tetanus*, both ariſing from wounds, both extremely formidable in their ſymptoms, and both terminating happily. In theſe caſes, the cold and tepid affuſion formed an important part of the very judicious treatment. The other new matter which we have noticed, conſiſts of ſome valuable remarks given in the form of notes, and an account of ſome experiments on inhalation by the ſkin, which appear favourable to our author's peculiar opinions on this ſubject. But neither theſe experiments made by Dr Rouſſeau at Philadelphia, nor the ſlender teſtimony of Seguin, nor all the evidence at preſent before us, are ſufficient to determine the queſtion reſpecting cutaneous abſorption. The ſpeedy and effectual mode of affecting the ſyſtem by mercury without friction, as by fumigation, according to the method propoſed by *Lalonette*, ſeems to furniſh reaſon for doubting the accuracy of ſome of the experiments made by Dr Rouſſeau. The vapours are not inhaled by the lungs during this ingenious proceſs of fumigation, becauſe the head is cautiouſly excluded from the machine. To enter farther upon this ſubject would lead us beyond our limits, and take us away from more important parts of this improved edition. Before proceeding, however, it may be proper to remark, that the ſecond volume is a continuation of the firſt, and may be had ſeparately by thoſe who already poſſeſs the edition of 1798.

This *ſecond volume* contains the author's experience of the cold and tepid affuſion, during five years of extenſive and accurate obſervation, ſubſequent to the publication of the former part of this work. Many additional communications are here given from different practitioners in different parts of the world. The reſult of this general and multiplied experience is highly ſatisfactory: the extenſive appeal here made to numerous and well authenticated facts is ſuch, as muſt leave a ſtrong impreſſion on impartial readers in favour of Dr Currie's practice and opinions. Every communication confirms the account formerly ſtated of the general efficacy of this remedy, and gives the author additional reaſon to affirm, 'that, uſed in the three firſt days of fever, the cold affuſion very generally ſtops the diſeaſe—that the ſame happy effects ſometimes follow its uſe on the fourth, or even fifth day, but ſeldom later—that even in the ſubſequent ſtages, where the heat continues preternaturally great, and the ſkin dry, it is of great and manifeſt advantage, almoſt immediately relieving the moſt diſtreſſing ſymptoms, particularly reſtleſſneſs and delirium, and conducting the diſeaſe *to a ſafe and ſpeedier iſſue*.'

In the febrile complaints of children, the tepid affuſion proves an invaluable remedy. In fevers accompanied by, or originating in high local inflammation, the author does not recommend the uſe of the cold or tepid affuſion, or cold drink. We wiſh much that he had ſtated the grounds of his objection to this practice in ſuch caſes, and given the reſult of his experience which has occaſioned his indeciſion on this intereſting queſtion. The following are ſome of the advantages attending the method of treating febrile diſeaſes by the cold affuſion, which more enlarged experience has diſcovered and confirmed. In no one inſtance has it appeared to be injurious. In the early ſtages, it ſtops the diſeaſe—it ſtrengthens the ſecurity in the means of prevention—it may be employed in fevers, even where catarrhal ſymptoms are preſent—it has been uſed in fevers of warm climates on patients under ſalivation, not only with impunity, but advantage—it has been applied with the moſt manifeſt advantage in *Scarlatina*, and ſuperſedes, in a great meaſure, the uſe of bark and wine in this formidable diſeaſe, as well as in Typhus—it has been employed in the eruptive ſtage of Meaſles in four caſes, though not by deſign;

ſign; and the diſeaſe that followed was ſingularly mild. Laſtly, it was uſed in the *Influenza* by Dr Currie on himſelf, with marked advantage. There are caſes, however, of Scarlatina, as well as of Small-pox, which do not receive the uſual advantages from cold and tepid affuſion. In theſe, the morbid heat is not exceſſive during the eruptive ſtage; and where great malignity and apparent putreſcency appear from the firſt beginning of the diſorder, how is a caſe of Scarlatina of this ſort to be treated? In the ordinary forms of this complaint, where the heat riſes to the higheſt degree obſerved in the range of the animal temperature of the human body, ſometimes up to 112° Fahrenheit, the application of the cold affuſion is fairly and obviouſly indicated, and numerous teſtimonies confirm the practical utility of it. Our author's experience is very ſtriking. In 150 caſes of Scarlatina, during three years, he has followed this practice with a degree of ſucceſs almoſt invariable. No practical obſervations are given reſpecting thoſe more aggravated and complex forms of this diſeaſe, which too often baffle every attempt to check the morbid phenomena.

In Chap. XXIII. Dr Currie details ſome of the communications he has received reſpecting the cold affuſion, in different parts of Great Britain. In London, this method of treating fevers ſeems to have been received with more frigid indifference than in other places. This circumſtance, if it were neceſſary, the author thinks, might be eaſily explained. It is to be hoped that theſe timid prejudices will be daily exploded, by the increaſing evidence of the advantages of ſuch bold and deciſive meaſures. An account is given of the ſucceſsful uſe of cold affuſion, in ſome caſes of Typhus, at the Houſe of Recovery in London. An abſtract of ſimilar accounts is given of its uſe in Edinburgh, Norwich, and Birmingham. In the laſt mentioned of theſe places, it has been advantageouſly employed on perſons in fever, labouring under all the accumulated evils of moral and phyſical diſtreſs. One paſſage in Mr Marſhall's letter, ſets in a ſtrong point of view the ſuperiority of the affuſion, when compared with ablutions. From the end of July to the 31ſt of October, he employed the cold affuſion in *ſixty-four caſes* of fever; in ſixty of theſe the diſeaſe was arreſted, the remedy ſeldom being required more than twice or thrice; and in no one caſe was it uſed more than four times. In the other four caſes, the diſeaſe being advanced, was not ſtopped by the remedy, though the patients ultimately recovered, (p. 492.) Mr Marſhall's ſituation, as ſurgeon to a militia regiment, afforded him the moſt favourable opportunities for employing this remedy at the very beginning of the diſeaſe; and his ſucceſs ſeems to have been equal to the opportunities he has had for making theſe trials on ſuch an ample ſcale. The fevers in the army and navy are moſt likely to be removed by theſe means. The claſs of patients are well ſuited, in every reſpect, for ſuch active practice; and the diſeaſes may be combated at their firſt onſet, if the men are narrowly watched, as they ought always to be, during the prevalence of any epidemic. In the fevers of the Weſt Indies, eſpecially when young and vigorous Europeans are attacked, early bleeding and antimonials may be employed with advantage, preparatory to the cold affuſion. The great ſucceſs of Mr Wilſon's practice leads to this general inference. (p. 499.)

The narratives of ſeveral navy ſurgeons are intereſting, and well deſerve peruſal. A long letter from *Dr Gomez*, phyſician to the Portugueze fleet, contains many valuable remarks, along with abundant illuſtration of the efficacy of the general plan, in reducing morbid heat, and interrupting the aſſociated morbid febrile actions.

The medium temperature of the water in Barbadoes is 74° or 75° Fahrenheit; and this appears equally efficacious as a colder application. In the fevers of the Weſt Indies, it has been found very grateful and advantageous. However, it did not ſucceed, according to Mr M'Gregor's account, in the fever moſt common in the Eaſt Indies. The failure, in ſome caſes, ſtated by Dr Maclean, is obviouſly to be imputed to its improper adminiſtration. The period and manner he adopted is quite oppoſite to the rules laid down by our author. At Philadelphia, the cold bath was uſed and recommended in epidemic fever by Dr Stevens; but it was ſoon abandoned. No thermometrical obſervations were regarded: its ſucceſs could only be precarious and accidental, as it was employed in the latter ſtages of the diſeaſe as a ſtimulant and tonic. It has lately been uſed with ſucceſs in Virginia, according to the rules laid down in the firſt volume of this work.

At the concluſion of theſe various communications, Dr Currie has offered a few general reflections on the reciprocal influence of the functions of digeſtion, reſpiration, and perſpiration on each other. What is here ſaid, excites our deſire to hear more. Upon this mutual dependence of three principal functions upon the reciprocal aid which they receive and beſtow, depends the healthy ſtate of the ſyſtem. And it is ſelf-evident, that a ſuitable harmony muſt exiſt between them, ſince the modifications of any one function will influence the actions of the other. Although the author does not conſider fever as conſiſting merely of a ſeries of phenomena, originating in a morbid accumulation of heat, yet he evidently looks upon it as an object of firſt importance. And ſo it undoubtedly is; for increaſed temperature is accompanied by increaſed action of the vaſcular ſyſtem; and this accumulation of morbid heat then becomes a ſource of irritation, and acts as a cauſe of its own continuance, its increaſe, and ſupply. If allowed to continue for any great length of time, we obſerve that heat debilitates the ſyſtem, diffuſes itſelf over every part of the body, deranges the functions, decompoſes the animal matter, and deſtroys the organization. Cold water and cool air diminiſh the force of this ſtimulus, and prove highly grateful and ſalutary. We ſhould have been glad, if the learned author had inſiſted more on the comparative merits of *affuſion* and *ablution*. Theſe two methods are generally confounded together, and their effects referred to the ſimple abſtraction of heat. After the third day of fever, they ſeem to act ſolely in this manner: their influence on the ſenſations is loſt, or not ſufficient to interrupt the ſeries of morbid actions; the heat is removed in the ſame degree by waſhing the ſurface of the body with a wetted ſponge, or cloths dipped in water, as by pouring cold water on the naked body; and the patient is relieved, as we have often witneſſed, exactly the ſame by one mode of treatment as by the other. But, in the early ſtages of the diſeaſe, the ſuperior efficacy of the affuſion is unqueſtionable; its operation extends beyond the mere abſtraction of heat from the ſurface; it acts powerfully on the nervous ſyſtem. The *magic charm* ſo frequently aſcribed to this remedy, appears to be owing to its removing ſo effectually, in the beginning of febrile diſeaſes, the uneaſy ſenſation of heat, and thus indirectly recruiting the animal powers. Its moſt ſtriking effect is, its inducing *ſleep*. When any diſagreeable ſenſation is removed, we know that ſleep ſoon follows. The ſudden removal of any irritation, as the intervals of pain in parturition, the ceaſing of the toothach, the abatement of violent pain in colic, &c. are illuſtrations of this general law.

The experience of Dr Currie, and that of his correſpondents (eſpecially the excellent letter of Mr Nagle), and every caſe that we have witneſſed, all agree in confirming this general notion. For wherever the cold affuſion has operated like magic in arreſting the progreſs of the diſeaſe at once, the patient has always ſunk into a ſound and refreſhing ſleep, from which he awakes like a new creature. Even in caſes where the cold affuſion was by ſome circumſtances forbidden, if applied, and if ſleep were induced by it, the patient became immediately relieved. Thus, in Mr Dalrymple's well-detailed caſe, though the ſhock was unexpected and ſevere, and the patient appeared to ſuffer much from it, yet, ' in a few minutes afterwards, his pulſe was examined, and found to beat 100 ſtrokes in a minute; his heat, which an accident prevented me from accurately meaſuring, was moſt ſenſibly diminiſhed; his mind became calm and clear; he expreſſed a feeling of regret for the trouble he occaſioned to thoſe about him; drank a glaſs of warm wine and water, and in about half an hour he ſunk into a deep *ſleep*, in which he continued nearly *eight hours.'*

Where the affuſion does not ſucceed in removing the ſymptoms, ſleep is not induced by it. The tepid affuſion did not produce its ſoothing influence in the caſe of the lady (page 404.); it was not, as uſual, effectual in producing tranquillity and ſleep. One reaſon why it did not ſucceed in the fever accompanied by dyſenteric ſymptoms, might be, the irritation in the bowels, which prevented or diſturbed its tranquillizing effects. In all the caſes related in our author's firſt publication, eaſy, tranquil or profound ſleep, with perſpiration or gentle diaphoreſis, always accompanied the action of the affuſion in cutting ſhort the diſeaſe. In that intereſting caſe, recorded p. 48, vol. I. where the cold affuſion proved ineffectual, no ſleep or diaphoreſis followed the application. This effect of the remedy becomes the more important, becauſe all the ordinary means of inducing ſleep often fail completely in fever; the influence of Opium is counteracted by the morbid accumulation of heat; the reſtleſsneſs and febrile anxiety is increaſed, inſtead of being removed by this medicine.

Among ſo many important particulars contained in theſe additional *Reports*, ſome muſt be omitted, and many perhaps overlooked, in ſuch a general ſketch as this we have attempted to give. We ſhall only notice, farther, that Dr Currie ſpeaks, in ſtrong terms of approbation, reſpecting the uſe of *Digitalis* in the diſeaſes belonging to the claſs *Phlegmaſiæ*, as well as in *Hæmorrhagiæ;* and he has added four letters as an appendix, on ſubjects of local and leſs general importance;—one to Dr Clarke on Fever Wards; two on a plan for building a Lunatic Aſylum; and one on the uſe of Nitric Acid in Syphilis.

Theſe *Medical Reports* ſhould be read by all practitioners. The precepts which they inculcate ſhould be tried and purſued—the ſtyle and manner ſhould be imitated. We do not find ourſelves called upon to vindicate the practice, becauſe, unlike moſt valuable propoſitions in phyſic, it has never been attacked. Through timidity, and a prejudice more owing to words than any thing elſe, it may have been neglected, but it has never yet been attempted to be controverted.

It has, beſides, this peculiar and immenſe advantage over every other remedy, that in every part of the globe an inexhauſtible ſupply is always at hand, affording a ſtrong preſumption in favour of the opinion, that nature has furniſhed an antidote in every country for the diſeaſes which prevail there. *Boerhaave* was unwilling to conſent, and *Voltaire* thought it ridiculous to ſeek a remedy, in South America, for the intermittent fever which prevails in the north of Europe. For the cure of our moſt common febrile diſeaſes, it is no longer neceſſary to ranſack the elaboratory of the chemiſt, or to traverſe the mountains of Peru.

II.

An Eſſay, Medical, Philoſophical and Chemical, on Drunkenneſs, and its Effects on the Human Body. By Thomas Trotter, M. D. late Phyſician to his Majeſty's Fleet, &c. 8vo. London, 1804.

When we conſider the curious and intereſting phenomena which preſent themſelves in the paroxyſm of intoxication, the long train of evils, and catalogue of diſeaſes to which the abuſe of vinous liquors gives riſe, we muſt acknowledge that the ſubject is of the higheſt importance, and well merits the attention of the philoſopher, of the ſtateſman, and of the phyſician.

The outline of the Eſſay now before us, was the ſubject of the author's inaugural diſſertation, publiſhed at Edinburgh on obtaining the degree of Doctor of Medicine in the year 1788. On this occaſion, he was anxious to produce ſomething that had never been noticed by any former graduate. Ebriety was choſen; and the work, we are now informed, delighted one Doctor, was well received by the Profeſſors, was peruſed with great pleaſure by Dr Gregory, gave riſe to ſome elegant alluſions and facetious remarks from Dr Cullen, and obtained for the author the thanks of the Humane Society. This general approbation determined Dr Trotter to enlarge his plan, and at ſome future period to preſent his obſervations to the public in an Engliſh dreſs.

Though Dr Trotter may not have been anticipated by any monographic eſſay on Drunkenneſs, we cannot allow him his whole claim to originality. Original he certainly is in ſome of his opinions, which we ſhall have occaſion to examine. Neither can we admit the validity of the complaint—of the little aſſiſtance he has derived from the writings of others. The ſymptoms and effects of drunkenneſs have often been deſcribed. By every practical writer, ebriety, and the abuſe of vinous liquors, have been marked as cauſes of diſeaſe; and, in theſe times, the modus operandi of alcohol has been amply diſcuſſed.

Dr Trotter, conſidering drunkenneſs as a diſeaſe of which he is to give the hiſtory and cure, divides his ſubject naturally enough into the following heads: *1ſt*, Definition of drunkenneſs; *2d*, The phenomena, or ſymptoms of drunkenneſs; *3d*, In what manner vinous ſpirit affects the living body; *4th*, The catalogue of diſeaſes induced by drunkenneſs; *5th*, The method of correcting the habit of intoxication, and of treating the drunken paroxyſm.

Drunkenneſs, as a diſeaſe, it is remarked, partakes both of delirium, and of coma. The moſt common characteriſtic of the paroxyſm is delirium, which generally terminates in a partial or total abolition of the powers of ſenſe and motion. It is propoſed, therefore, to adopt the following definition: 'Poſt vinum immodice aſſumptum, Delirium et Coma;' or, 'Imbecility of intellect, erroneous judgment, violent emotions, and loſs of ſenſe and motion, after the immoderate uſe of vinous liquors.' It is often important to be able to decide with certainty on the preſence of intoxication; it would be fortunate, therefore, if any number of ſymptoms, collected into the form of a definition, could enable us to do ſo. But the definition here given embraces only an extreme caſe, without marking the various ſhades and appearances which take place in different individuals in the progreſs of intoxication. Conſidered in the light of a noſological definition, nothing is gained by introducing the cauſe; for, whereever any doubt ariſes, this is always ſuppoſed to be unknown. The ſymptoms of delirium and coma may be produced by various cauſes, by opium and narcotics. But a miſtake of a more dangerous nature may be committed, as we learn from the following important remark. 'There is a ſpecies of delirium that often attends the early acceſſion of typhus fever from contagion, that I have known to be miſtaken for ebriety. Among ſeamen and ſoldiers, where habits of intoxication are common, it will ſometimes require nice diſcernment to decide; for the vacant ſtare in the countenance, the look of idiotiſm, incoherent ſpeech, faltering voice, and tottering walk, are ſo alike in both caſes, that the naval and military ſurgeon ought at all times to be very cautious how he gives up a man to puniſhment under theſe ſuſpicious appearances.'

Our author next proceeds to give a more detailed account of the phenomena and ſymptoms of drunkenneſs. Theſe however are ſo well known, and ſo often witneſſed, as to render it quite unneceſſary to follow him through his long and claſſical deſcription of the drunken paroxyſm.

After detailing the effects of inebriation, Dr Trotter enters into the inveſtigation of the manner in which vinous ſpirit affects the body. Here Dr Trotter ſeems inclined to adopt the opinion of thoſe who hold all narcotics to be in the firſt inſtance ſtimulant. But although ſome intoxicating articles are unqueſtionably ſtimulant; yet no one ſurely can deny that many of the moſt powerful of the inebriating kind ſhew no influence whatever either in inducing contraction, exciting pain, or preventing ſleep—the true characteriſtics of ſtimulants; while, on the other hand, many of the ſtrongeſt ſtimulants, whether of the chemical or mechanical kind, have no narcotic powers. Cantharides, and the eſſential oil of peppermint are powerful ſtimulants, yet never were known to produce intoxication. There is therefore no neceſſary connexion between the ſtimulant and narcotic powers of ſubſtances.

The intoxicating quality of vinous liquors, however, depends upon the alcohol which they contain, the firſt effects of which are ſtimulant and exciting; this excitement is ſoon followed by delirium and loſs of voluntary motion, and paſſes at length into that ſtate of debility which has been called with ſome propriety *indirect*. But though the baneful effects of vinous liquors depend chiefly upon the alcohol which they contain, there are ſome whoſe hurtful tendency is increaſed by other circumſtances. Thus ſome beers, and particularly porter, are rendered more noxious by the narcotics and bitters which enter into their compoſition. Hence Dr Trotter remarks, we believe with truth, that malt-liquor drinkers are prone to apoplexy and palſy, and purl drinkers in a ſtill greater degree.

Whatever may be the nature of mind, whatever the connexion between body and mind, it is certain that the intellectual faculties may be affected and deranged by diſeaſe, and by other changes induced on the material organs of our ſyſtem. The ſtimulant action of ardent ſpirit is firſt exerted on the ſtomach, and ſpreads by ſympathy from thence to the cenſorium commune, and the reſt of the ſyſtem.

But Dr Trotter is alſo of opinion that much of the liquor enters the circulation, and gives there an additional ſtimulus. Of this, however, we ſee no proof. The full effects of intoxication may be induced ſo ſuddenly, ſo inſtantaneouſly indeed, by a large doze of wine, that all belief of any portion of it having entered the circulation is completely deſtroyed. Nor is there any better reaſon for admitting this, when intoxication has taken place more gradually. The ſhort duration of the paroxyſm alſo, and the ſpeedy relief obtained from vomiting, are againſt the ſuppoſition. Beſides, it is confeſſed that all the ſymptoms of intoxication are equally occaſioned by a few grains of any narcotic. It may alſo be urged, that neither the blood, nor any of the excretions, when examined, give any indication of the preſence of the alcohol, or intoxicating ſubſtance.

It is ſurely but an indifferent argument to ſay, ‘ we are acquainted with no particular appetency inherent in the lacteal veſſels,

ſels, that can confine the abſorption only to mild and bland fluids.' The truth however is, that ſuch an appetency has actually been demonſtrated. It was found by experiment, that ſome colouring matters, as madder and indigo, were abſorbed by the lacteals, which refuſed to take up the ſulphate of iron, or the ſolution of tanin.

There is little doubt, we think, that wine, beer, or other intoxicating liquors received into the ſtomach, are gradually decompoſed and digeſted, ſo as to be ſoon completely changed; nor, on any other ſuppoſition, can the natural termination of the drunken paroxyſm be accounted for.

Another argument adduced by Dr Trotter we muſt regard as hypothetical. 'That vinous ſpirits mix with the blood we know to a certainty, from the hydrogenous gas which eſcapes from the lungs, to be perceived in the fœtor of the breath.' Surely the fœtor of the breath is no proof of the diſengagement of hydrogenous gas from the lungs. The fœtor itſelf is beſides moſt remarkable, not during the paroxyſm of intoxication, but afterwards, when the patient is ſuffering from the ſecondary effects, from debility, nauſea, and anorexia. The fœtor of the breath is the ſign of his charged and diſordered ſtomach.

Indeed, we ſhall look in vain for ſimplicity and unity in our author's explanation of the phenomena of intoxication. Not contented with the ſtimulant and narcotic effects of vinous ſpirits exerted on the ſtomach, he makes theſe, without any good reaſon, enter the circulation; and, as if all this were not ſufficient, he has now recourſe to the mechanical compreſſion of the brain by the ſurcharged ſtate of the blood veſſels, which, he thinks, accounts for the comatoſe affection which attends ebriety; and, again, having remarked that ſtrong ale and porter drinkers become fat and ſtupid, we are told that 'the blood veſſels would appear to be clogged with a denſe blood.' But beſides the intoxicating effects of alcohol, it has alſo, according to Dr Trotter, a *chemical operation* on the human body. That the continued abuſe of ſpirituous liquors ſhould, by deranging and debilitating the powers of life, affect alſo, in ſome degree, the chemical compoſition of the body, might perhaps be, without difficulty, admitted. But that alcohol directly deoxydates the blood, and charges the circulating maſs with hydrogen, we are diſpoſed to doubt. We have already conciſely ſtated our reaſons for concluding that alcohol is never abſorbed by the lacteals, and we are certain it has never been detected in the circulating fluid, nor in any of the ſecretions. On the other hand, there is evidence that wine, beer, and other intoxicating liquors received into the ſtomach, are decompoſed, and new compounds formed from their elements.

But the blood of drunkards, Dr Trotter informs us, is charged with hydrogen, the moſt abundant element of alcohol; becauſe their blood approaches to the colour of venous, being darker than uſual; becauſe hydrogenous gas ſeems to be ſent off from the lungs in a diſengaged ſtate, and is often ſo pure in its kind, from the mouth of a dram-drinker, that it is eaſily inflamed on the approach of a candle; becauſe Mr Spalding, the celebrated diver, always found, after drinking ſpirits, the air in his bell conſumed in a ſhorter time than when he drank water. To this reaſoning, it may be ſufficient to reply, that the darker colour of the blood is no proof of an over-charge of hydrogen; as this change of colour may be effected, and does in fact often take place, without the introduction of any new principle, and merely by a new arrangement, or more intimate combination of its elements,—as is proved by the change from the arterial to the venous colour obſerved in blood kept in hermetically ſealed veſſels, or in vacuo. But we farther ſuſpect that Dr Trotter's obſervation has not been made on the circulating maſs, but inferred from the livid and bloated countenance of drunkards, which proceeds from the languid circulation in the veins.

The fœtor of the breath, we have obſerved, is no proof of the evolution of hydrogenous gas from the lungs. And we are doubtful of the *breath* of a dram-drinker being ſo inflammable. We have ſeen ſailors perform this *trick* immediately after ſwallowing ardent ſpirits, but never at any other time.

There is nothing ſingular in the fact related on the authority of Spalding. Whatever increaſes the circulation of the blood, as food recently taken, exerciſe, the hot ſtage of fever, increaſes alſo the conſumption of air in reſpiration. No concluſion, therefore, in favour of the hypotheſis, can be drawn from that circumſtance.

The view which Dr Trotter has taken of the chemical operation of alcohol, leads him naturally enough to what he terms the moſt important part of this doctrine, *the combuſtion of the human body*, produced by the long and immoderate uſe of ſpirituous liquors. On this ſubject we may remark, that the evidence for the ſpontaneous combuſtion of the body is next to nothing: and the caſes collected by Pierre Aimé Lair, prove only that drunken old women have fallen into the fire, or ſet fire to their clothes, and periſhed in conſequence. 'The combuſtion took place only in women'—'Theſe women were far advanced in life'—'Their bodies did not take fire ſpontaneouſly, but were burnt by accident.'

It is in vain, Dr Trotter well obſerves, to requeſt implicit faith to this narrative; and it matters little, therefore, in our opinion, what explanation the preſent ſtate of chemiſtry might enable us to give of it.

Having thus ſtated his opinion as to the intoxicating and chemical operation of ardent ſpirit on the human body, Dr Trotter proceeds to conſider the diſeaſes which are induced by drunkenneſs.

1. Diſeaſes which appear during the paroxyſm of drunkenneſs. Apoplexy; Hyſterics; Convulſions; Oneirodynia; and fearful dreams.
2. Diſeaſes induced by habitual intoxication. Phrenitis; Pleuritis; Gaſtritis; Ophthalmia; Carbuncles; Hepatitis; Podagra; Scirrhus; Icterus; Dyſpepſia; Hydrops; Tabes and Atrophia; Syncope and Palpitatio; Diabetes; Locked Jaw; Palſy; Ulcers; Madneſs and Idiotiſm; Melancholy; Impotency, and abolition of the Sexual Appetite; Premature old age.

Let the drunkard contemplate this frightful catalogue, and daſh the cup from his lips! On ſeveral of theſe diſeaſes, Dr Trotter takes occaſion to offer ſome pertinent and uſeful remarks; after which, he proceeds to point out the method of correcting the habit of intoxication.

The ſeeds of this evil habit, he obſerves, are, like many others, ſown in infancy; and he recommends that ſpirits, wine, and fermented liquors of all kinds, ſhould be excluded from the diet of infancy, childhood, and youth. He is of opinion, that no man in health can need wine till he arrives at forty. He may then begin with two glaſſes in the day; at fifty he may add two more; and at ſixty he may go the length of ſix glaſſes; but this quantity he ſhould not exceed, even although he ſhould live to a hundred. All this is indeed very particular.

A cuſtom has long prevailed, in this and other countries, of drinking wine while at dinner. This Dr Trotter conſiders as downright pampering, as vitiating taſte and healthful appetite, and therefore, he thinks, ſhould be totally relinquiſhed. In this particular, we own we do not ſubſcribe to the Doctor's unqualified condemnation. We like the cuſtom; and would rather imitate the example of our neighbours of the Continent, and abridge the allowance after dinner: For although we are far from denying, that exceſs in the uſe of wine, even during meals, may be pernicious; yet, in our opinion, one or two glaſſes may be taken during dinner, even by thoſe not arrived at their fortieth year, not only with impunity, but even with advantage.

Another circumſtance which, according to Dr Trotter, has often produced the propenſity to drinking, is the too frequent uſe of ſpirituous tinctures, raſhly preſcribed as medicines for hyſterical and hypochondriacal complaints. The cuſtom of handing round cordials at time of dinner, is alſo againſt all rules of temperance; and the uſe of liqueurs, particularly of Noyau, ſhould, he thinks, be totally abſtained from. It muſt be confeſſed, however, that theſe practices very rarely, if ever, operate with the lower claſs, among whom this pernicious habit is particularly prevalent. We are ready, however, moſt cordially to ſubſcribe to our author's ſentiment, that as the habit of ebriety is ſo difficult to be overcome, from whatever cauſes it may have begun, the beſt maxim is, 'Obſta principiis.' In this way, perhaps, much might be done by the exertions of Government, and particularly by rendering the acceſs to dram-drinking a leſs eaſy matter for the lower claſs. Among other means of preventing drunkenneſs, might be ſuggeſted additional duties on ſpirits, and additional regulations with regard to the ſale of ſpirits, particularly by retail.

However ſeducing the love of inordinate drinking may be, like other bad habits, mankind ſeldom get into it at once. In this vice there is alſo a gradation; and it is at the commencement that the good ſenſe of the individual, and the advice of prudent friends, will have the greateſt influence. When ebriety has become ſo far habitual, that diſeaſe appears, the phyſician is called in, and a moſt ungrateful taſk devolves upon him; for the diſeaſe is only to be effectually combated by the removal of its cauſe. In accompliſhing this, the firſt great point to be obtained is the confidence of the patient; after which he may, with great advantage, repreſent the incurable maladies which flow from a continued courſe of intemperance.

It has been a doubt with ſome phyſicians, whether, even if the patient were willing, it would be proper all at once to leave off the uſe of wine or ſpirits. Dr Trotter, however, is decidedly of opinion, that this ſhould be done in every inſtance, and that no diſadvantage can reſult from it. For our own part, we think it impoſſible to lay down ſo general a rule, and believe that the conduct of the judicious practitioner muſt be regulated by circumſtances. There are complaints originating from drunkenneſs, in which it would be dangerous all at once to deprive the patient of his accuſtomed ſtimulus. What cannot be accompliſhed at once, may ſometimes be obtained gradually; and one ſtimulus, ſuch as an eſſential oil, an aromatic powder, or even an aromatic tincture, may often be advantageouſly ſubſtituted to pure alcohol.

To ſtrengthen the body debilitated by habits of intoxication, recourſe, it is obſerved, may be had to the cold bath, chalybeate waters, exerciſe, and tonics. Acidity and flatulence are to be corrected by abſorbents and bitters, ſuch as magneſia and colomba.

When a diſeaſed liver has ariſen from drunkenneſs, Dr Trotter ſeems very averſe to a mercurial courſe. In the tubercular or ſcirrhous liver, he tells us, it has ſeldom appeared to him to be of any ſervice, beyond its action in keeping the bowels open, when coſtiveneſs was to be guarded againſt. Our experience, however, does not lead us implicitly to adopt this concluſion: On the contrary, in more than one inſtance of ſcirrhous liver, complicated with dropſy, we have ſeen mercury employed with great advantage; and this we believe to be agreeable to the general obſervation of modern practitioners. Indeed, in ſuch caſes, we are not acquainted with any remedy of equal efficacy.

Our author concludes this eſſay with a few remarks on the beſt method of treating the drunken paroxyſm; and here he thinks reliance is chiefly to be placed on the means of exciting vomiting. If the drunken perſon have ſo far loſt the powers of ſenſe and motion as to be unable to help himſelf, he ought to be placed in an arm-chair where he cannot fall, or be laid in bed, with the head erect, and inclining a little to one ſide, for the purpoſe of facilitating vomiting; the beſt means of exciting which is, he informs us, by introducing a feather, or any other ſuitable ſubſtance, into the mouth, and tickling the fauces, till the contents of the ſtomach be fully evacuated. Beſides vomiting, Dr Trotter alſo recommends that the bowels be immediately emptied by glyſters. He obſerves, that if the face be much ſwollen, and the breathing ſtertorous, with the eyes fixed, and veſſels turgid, there is danger of an inſtant fit of apoplexy. To us it ſeems very ſurpriſing, that, in ſuch circumſtances, Dr Trotter ſhould expreſs any doubt as to the propriety, and even abſolute neceſſity, of immediate bloodletting, general and topical. The quantity of evacuation indeed muſt, in this as in every other diſeaſe in which bloodletting is employed, be regulated by the age, the habit, and the ſymptoms of the patient; and, after bloodletting, the application of a large bliſter to the head ſhould not, we think, be omitted. How this practice has altogether eſcaped Dr Trotter's notice, we are at a loſs to conjecture. He indeed adviſes, throughout the whole paroxyſm of drunkenneſs, the application to the head and temples, of cold water, rectified ſpirits of wine, or ſulphuric æther. But although theſe practices may be of ſome uſe in counteracting headach ariſing from ſlighter degrees of intoxication, yet little dependence can, we think, be put upon them in the prevention, and ſtill leſs in the removal of apoplexy. Dr Trotter, in the circumſtances mentioned above, alſo ſuggeſts the uſe of the ſhower-bath, and the clay-cap, ſometimes uſed in maniacal caſes. But he very properly obſerves, that the application of cold water to the head is not at all times a ſafe remedy. The caſe of an officer is mentioned, who, in the ſecond ſtage of the drunken paroxyſm, plunged his head into a bucket of cold water, and was ſoon after ſeized with phrenitis, which terminated fatally.

In concluding our account of the Eſſay on Drunkenneſs, we have only farther to obſerve, that although we have had occaſion to object to ſeveral of the opinions advanced by the ingenious author, we have peruſed his volume with much ſatisfaction, and not without emolument.

The prevention of thoſe evils which ariſe from the abuſe of vinous liquors, is certainly a ſubject of the utmoſt importance, and claims the moſt ſerious attention, not only from the medical practitioner, but from every wiſe and well regulated government.

III.

Practical Obſervations on the Treatment of Strictures in the Urethra, and in the Oeſophagus. By Everard Home, Eſq. F. R. S. Surgeon to St George's Hoſpital. Vol. II. London, 1803. 8vo. pp. 424.

THE labours of Mr Home in this department of ſurgery, are already well known to the generality of practitioners. To him we are indebted not only for recommending to general uſe an improved method of cure, but for the moſt accurate and complete hiſtory of ſtrictures in the Urethra yet publiſhed.

Although a more deſerved confidence has been placed in few remedies than in the bougie, by a ſteady and perſevering uſe of which, Strictures may for the moſt part be greatly relieved, if not completely removed, yet it cannot be denied by thoſe who have had much experience in theſe complaints, that their hopes have been often diſappointed; that from the number and duration of the ſtrictures, the proceſs by the ſimple bougie was tedious, and ſometimes ineffectual, or, from local or conſtitutional irritability, impracticable; and that, even when a cure ſeemed accompliſhed, relapſes were not unfrequent.

From a knowledge of theſe diſappointments, and of the anatomical ſtructure of the diſeaſed parts, the late Mr J. Hunter was led to propoſe the deſtruction of the ſtricture by the application of cauſtic; and the ſucceſs which attended an attempt not altogether new, was ſuch as to encourage a repetition of the practice.

The inſtrument firſt employed by Mr Hunter was a ſilver canula, through which, by means of a port-crayon, the cauſtic might be conveyed to the ſtricture, without the riſk of hurting the ſound parts of the urethra. But this inſtrument not yielding to the flexible canal of the urethra, did not admit the accurate application of the cauſtic to the middle of the ſtricture intended to be deſtroyed; and hence the ſide of the urethra was liable to be injured, and an oblique paſſage produced.

Mr Hunter, aware of the objections to his former method, had, for ſome years before his death, employed the armed bougie, which, with the improvements by Mr Home, is now ſo well known to ſurgeons. By means of the bougie, the cauſtic may be conducted directly to the ſtricture in any part of the urethra, and, in the hands of the experienced ſurgeon acquainted with the anatomy of the parts, without danger of thoſe accidents to be apprehended from the inflexible canula. The advantages of the armed bougie have now indeed been fully confirmed by experience. Succeeding where the ſimple bougie has failed, it is more extenſively uſeful, it is more effectual, and the cure more permanent; it is quicker in its operation, and in many caſes milder than the mode of dilatation by the ſimple bougie. Great caution and delicacy, however, are neceſſary; nor can the cauſtic be ſafely committed to thoſe not intimately acquainted with the anatomy and morbid ſtructure of the parts. Indeed, from the difficulty and apparent riſk of conducting the cauſtic through a conſiderable length of canal of ſuch high ſenſibility and extenſive ſympathy as the urethra, and of confining its action to the ſtricture alone, it was not to be expected that this practice ſhould be adopted the moment it was propoſed, and that ſurgeons ſhould all at once free themſelves from apprehenſions which, *a priori*, ſeemed ſo well grounded. It required, beſides, a very ample experience to unfold the advantages of the Cauſtic in caſes of Stricture where the bougie had failed or could not be employed, from the extreme ſenſibility of the diſeaſed organs, and to convince us that the cauſtic was, in ſuch caſes, more mild in its operation, and more extenſively applicable than the unarmed bougie. Some heſitation, therefore, from apprehenſions ſo natural, was to be looked for, from ſurgeons old in the accuſtomed practice. This reſerve, however, even when active, ſhould be treated with indulgence, and ſhould not be claſſed with thoſe narrow and ſelfiſh prejudices which obſtruct the progreſs of improvement. We regret, therefore, that Mr Home, in the very midſt of triumph, ſhould loſe temper, and ſo far forget himſelf as he appears to us to have done, in the introduction to the volume now before us. For we do not perceive, in the opinion given by Mr Bell in his work on the Venereal Diſeaſe, any provocation which can juſtify the publication of a correſpondence which, under other circumſtances, Mr Home ſays, he would have thought improper. Nor can we conſtrue into a challenge, calling for a vindication of the oppoſite opinion, the preſent which Mr Bell made to Mr Home of his book. But Mr Bell, it ſeems, has, ſince this correſpondence took place, had ample time, either publicly or privately, to avow his error, which however, greatly to the diſſatisfaction of Mr Home, he has not done.

This correſpondence is opened by a letter from Mr Bell, introducing a patient who was going to London to place himſelf under the care of Mr Home.

Mr Bell, in the moſt candid and honourable manner, ſtates the circumſtances of the caſe, and relates the means which had hitherto been ineffectually employed for the patient's relief. The ſtrictures were of twenty years ſtanding. The bladder was diſeaſed, enlarged, hard and painful; the proſtate gland was alſo enlarged; and the patient's ſtrength was ſo reduced, that he could not be moved from bed. Theſe ſymptoms, Mr Bell obſerves, could only be relieved by the removal of the ſtrictures. Bougies were accordingly employed, and the paſſage was thus made completely pervious to the height of ſix inches and a half; but beyond this, neither the common bougie, nor the London bougie *armed with cauſtic*, could ever be paſſed, though all of them got as full a trial as was admiſſible in a conſtitution ſo very irritable; for, frequently, the ſlighteſt application even of a ſoft bougie, whether armed with *cauſtic* or not, excited a ſevere ague. He was recommended to remain in the country during the ſummer months; and having there recovered a great deal of fleſh and ſtrength, he was determined on going to London, to place himſelf under Mr Home's care, through whoſe aſſiſtance, Mr Bell ſincerely hopes, he will get entirely well.

It appears, then, that Mr Bell, ſo far from ſhowing an illiberal oppoſition to the armed bougie, had actually employed the cauſtic in this very caſe, which he certainly would not have done, if he had ſtill conſidered the practice as dangerous, and not likely to anſwer the purpoſe. And though, from the ſtate of the patient's health, his own attempts had failed, he yet expreſſes his hopes that, through Mr Home's aſſiſtance, 'he will get entirely well.' This, we think, might have ſatisfied Mr Home. The letter contains nothing provoking, nothing inſulting. It ſhould not naturally have given occaſion to the triumphant and petulant anſwer returned, and now publiſhed by Mr Home. In this anſwer, our author reverts to the condemnation of his mode of treating Strictures, publiſhed by Mr Bell in his work on the Venereal Diſeaſe, which, he now obſerves, flattered him exceedingly, being an evidence upon record, of his having acquired 'a more extenſive knowledge of the diſeaſe, than had been attained by the ſurgeons of Edinburgh.' And after this liberal ſelf-applauſe, he delicately aſſures Mr Bell, that ſucceſs was hardly to be expected from the uſe of the cauſtic in his hands, while, with a compliment to Mr Bell's humanity, he adds, that five applications of the armed bougie, without the aid of internal medicines, had enabled the patient to paſs a full-ſized bougie into his own bladder, and that all his other complaints had left him.

Mr Home is well ſatisfied that the public ſhould judge between him and his opponents. For our own part, while diſpoſed to pay every juſt tribute of praiſe to the merits of Mr Home, we heartily condemn this inſtance of intemperate conduct, for which we cannot diſcover the ſmalleſt apology.

In a former volume, Mr Home had ſome years ago given a full account of the more common caſes of ſtricture, and deſcribed at length, the method of treating them by cauſtic. A very extenſive experience in this branch of practice now enables him to lay before the public another volume, explaining ſuch varieties and complications of the diſeaſe as have come to his knowledge ſince the publication of the former.

A work ſo purely practical, compoſed entirely of obſervations derived from the author's own experience, and illuſtrated by a variety of caſes, affords but little room for analyſis or criticiſm. We ſhall content ourſelves, therefore, with a very brief account of this intereſting volume, which we cannot too much recommend to the attentive peruſal of every ſurgeon.

The firſt chapter is dedicated to general obſervations.

Strictures of the urethra are accompanied not only by diſeaſed actions of the organs more immediately aſſociated with it, but by a variety of conſtitutional affections alſo, which are apt to be miſtaken for idiopathic diſeaſes. That theſe, however, are ſymptomatic of the condition of the urethra, has been determined, Mr Home remarks, in three different modes.

'The firſt is, that patients are liable to them, while labouring under that diſeaſe; the ſecond, that they very often are brought on in the courſe of a few hours, after an armed bougie has been applied to the ſtricture; and whenever they follow ſuch an application, it has been found that the ſymptom then produced has, at a former period, been met with in the ſame patient. The third is, that after the removal of the ſtrictures the ſymptoms diſappear, although the patient had been liable to them for a number of years.'

Theſe conſtitutional ſymptoms are, regular paroxyſms of intermittent fever; a ſtate of general irritation; delirium; diſorder of the ſtomach and bowels; ſciatica; hyſterics and epilepſy; attacks of eryſipelas on the head and face; inflammation of the tonſils and throat; eruptions on the ſkin, &c. To the uſual modes of treatment, theſe ſymptoms do not yield. The bark, for example, does not prevent the return of the intermittent paroxyſm. The only medicine which Mr Home has found uſeful in this caſe, is a purgative draught.

Mr Home having formerly explained the nature of ſtricture in its more ſimple ſtate, now obſerves, that a ſtricture in the urethra undergoes changes within itſelf, by which the cure is rendered more tedious, more difficult, and, in ſome inſtances, impoſſible. The membrane which forms the ſtricture becomes ligamentous, and ſometimes acquires the hardneſs of cartilage; and, in ſome caſes, this diſpoſition to induration extends itſelf into the ſurrounding parts. Sometimes, again, the ſpace between two ſtrictures is diminiſhed in capacity, and the membrane of the intermediate portion becomes thicker than the reſt of the urethra, ſo as to form, in ſome reſpect, one continued ſtricture. And in the treatment of ſuch caſes, great addreſs and experience is required in the application of the cauſtic, leſt a falſe paſſage be formed in the ſpace between the bulb of the urethra and the fundament.

The mode of treating ſtrictures by cauſtic has now been in uſe for eight years, a time ſufficient to enable Mr Home to draw ſome important concluſions reſpecting the conſequences produced by it.

The following are the reſult of his experience.

'That it does not diſpoſe the parts to take on any other diſeaſe is ſufficiently eſtabliſhed, as there is no one inſtance within my obſervation in which that has been the caſe.

'That the parts recover themſelves after the uſe of the cauſtic, and acquire the natural ſmooth ſurface they originally poſſeſſed in common with the reſt of the urethra, is alſo completely aſcertained.

'That removing the ſtricture reſtores the parts to all their natural functions, has been proved by the effect on patients in a married ſtate, who had for years palliated the ſymptoms by means of bougies, and during that period had not begot children, but who were afterwards capable of doing ſo during the ſame marriage.'

With regard to the permanency of the cure, Mr Home candidly acknowledges, that in many caſes there has been a return.

Where the ſtricture has been removed in an early ſtage of the complaint, and no other diſeaſe has been ſince contracted, there is no probability of a relapſe; but a freſh gonorrhœa, and the uſe of injections, may occaſion a return. The gout, too, has a ſingular influence over the urethra; inſomuch, that a patient who has had ſtrictures removed by the cauſtic, is liable to a return in almoſt every fit of that diſeaſe. Laſtly, where the ſtricture has been of long ſtanding, the parts to which the cauſtic has been repeatedly applied, become rigid and leſs pliant, from the conſolidation of the coats of the urethra; and theſe parts being conſequently leſs perfect in their natural action, remain in a middle ſtate of contraction, and become fixed in that ſtate, producing a return of ſtricture. But this return may be prevented by paſſing a bougie occaſionally.

After theſe general obſervations, in the following chapters are ſucceſſively conſidered,

Affections of the urethra which have been miſtaken for ſtrictures, and treated as ſuch.—Various ſubſtances taken into the ſtomach, ſuch as ginger, burgundy, beer, have occaſioned irritation in the urethra, and induced ſymptoms reſembling thoſe ariſing from ſtricture. Piles alſo, the inflammatory ſtage of gonorrhœa, and inflammation of the internal membrane of the bladder, have had a ſimilar effect.

Strictures which require an unuſual number of applications of the armed bougie for their removal.—To this claſs, in general, belong ſtrictures of old ſtanding, whoſe texture has become firm and ligamentous, and which are complicated with a ſecond, or third conſequent ſtricture. In ſuch caſes, it is remarkable that the ſenſibility of the original ſtricture is transferred to the ſecond; ſo that the ſymptoms are relieved by the deſtruction of the laſt formed ſtricture by the cauſtic, and again brought on by the bougie paſſing through it. The cure is often very tedious and difficult, requiring many and repeated applications of the cauſtic. In one caſe, the patient ſubmitted to four hundred and eighty-nine applications, at different times, during ſo long a period as ſix years, before a cure was obtained.

The effects of long continuance of ſtricture in the urethra upon the bladder.—Neglecting the more common ſymptoms of irritation, Mr Home here confines his obſervations to the changes of ſtructure of the bladder from long continued ſtrictures. The firſt is, a diſeaſed ſtate of the internal membrane of the bladder, moſt frequently met with in aged perſons: the coats are much thickened, and the internal one acquires a ſpongy texture. Examples are given of this ſtate of the bladder; and, amongſt others, that of a general officer, whoſe journal, written by himſelf, occupies one hundred pages of the work. The caſe, however, is highly intereſting. 'It is one,' Mr Home obſerves, 'which Darau, and every ſurgeon of eminence ſince his time, had taken charge of without ſucceſs. It is one in which Mr Hunter tried the cauſtic without performing a cure.' By the ſkill and perſeverance of Mr Home, aided by the uncommon fortitude and confidence of the patient, the ſtrictures were at length ſubdued, and the ſufferings of the patient greatly relieved. The ſymptoms, however, of irritable and diſeaſed bladder never went off, and at length terminated the exiſtence of the unfortunate ſufferer. The proſtate was enlarged, and ſuppurated; the abſceſſes had opened into the bladder, whoſe internal membrane was inflamed, and encruſted with coagulable lymph. As more rare occurrences, caſes are given, in the following ſections, of ulceration of the internal membrane of the bladder, attended with hæmorrhage; of openings formed between the bladder and rectum; and of rupture of the bladder, or, more properly, of its communication with the cavity of the abdomen, in conſequence of the progreſs of ulceration.

Though the moſt common cauſe of ſtricture is gonorrhœa, yet obſtructions in the urethra, demanding nearly the ſame mode of treatment, may be produced by other cauſes. Examples had been given in the firſt volume. And in the preſent, we have caſes detailed in the 5th, 6th and 7th chapters, of *ſtrictures brought on by onaniſm, by accidental violence on the perinæum, and of thoſe produced by inflammation in the lacunæ of the anterior part of the urethra.* This laſt ſtricture differs eſſentially from thoſe hitherto treated of. It is not properly a contraction of the internal membrane, but a thickening of the coats of the urethra from inflammation in the duct of the lacuna. Its ſeat is generally about three or four inches from the external orifice, and is characterized by a hard lump, about the ſize of half a pea, diſtinctly felt through the integuments on the lower ſurface of the urethra.

This effect of local inflammation may ariſe from different cauſes; but in all the inſtances obſerved by Mr Home, the complaint has been traced to the uſe of ſome irritating injection. In this ſpecies of ſtricture, all the coats of the urethra and cellular membrane are thickened. Little good can be effected by the common bougie; and particular caution is required in uſing the cauſtic, which, if too large, may produce a ſlough, extending into the ſurrounding parts, or an abſceſs in the lacuna breaking into the urethra.

Strictures producing other diſeaſes.—Mr Home has met with two caſes of violent *eryſipelas of the head and face*, ariſing from the application of the common, and of the armed bougie, to ſtrictures in the urethra.

Inſtances are alſo given of ſciatica, in conſequence of ſtricture; of ſtrictures producing an involuntary paſſing of the urine;

of enlargement of the teſticle ſubſiding when the ſtricture was removed; and of a diſeaſed ſtate of the ſurface of the tongue, which diſappeared upon the removal of the ſtricture.

Strictures in the urethra may be complicated with other diſeaſes of the urinary ſyſtem, occaſioning ſymptoms of irritation in the bladder, which will continue after the removal of the ſtrictures; as when a ſtricture in the urethra is accompanied with a ſtone in the kidney. A caſe of this kind is related in the ninth chapter.

In ſome conſtitutions, from the diſpoſition to violent paroxyſms of fever, the cauſtic cannot be continued a ſufficient length of time for the removal of the ſtrictures. But caſes, Mr Home informs us, have come under his obſervation, in which the partial uſe of the cauſtic has enabled the patients to purſue the uſe of the common bougie in a way which, before the cauſtic had been applied, was entirely out of their power.

By a raſh and unſkilful application of the cauſtic, falſe paſſages have been formed; the armed bougie therefore ſhould never be truſted in the hands of thoſe ignorant of the anatomical ſtructure of the parts, nor committed to the guidance of the patient himſelf. To avoid ſo unfortunate an occurrence, requires, eſpecially in ſtrictures of old ſtanding, the utmoſt care and attention. In ſuch caſes, Mr Home obſerves that the armed bougie acts more powerfully upon the under part than the upper, in conſequence of the diſſolved cauſtic reſting there; and in this way, for want of attention to what is going on, a breach may be made through the urethra, and a new paſſage formed below the natural one. The beſt guide is the unarmed ſoft bougie, the end of which, being preſſed upon the ſtrictured part, will, from the impreſſion made upon it, give accurate information of the progreſs of the cure. 'If the end is ſmooth upon its lower ſurface, and there is a tranſverſe notch upon the upper, the uſe of the cauſtic is to be perſevered in; but if the notch or other irregularity is upon the lower ſurface of the point, and if the end of the bougie is ſplit, one portion paſſing upwards and the other down; or if the whole of the point is turned a little downwards; it will then be improper to perſevere with the cauſtic, as the bougie is evidently taking a wrong direction. Under ſuch circumſtances, a ſilver catheter, which has a greater than ordinary curve, ſhould be introduced; and in general it may be guided into the bladder, the ſtricture either having been wholly removed, or ſufficiently ſo, to admit of its being paſſed.'

In the 12th chapter, are next related, with great minuteneſs, four caſes of ſuppreſſion of urine from ſtricture, requiring the operation of puncturing the bladder. In the firſt caſe, the bladder

der was punctured above the pubes, in the other three from the rectum. Though ſucceſsful in all, Mr Home gives the preference to the laſt operation. We think it neceſſary however to obſerve, that our choice muſt be determined by the circumſtances of the caſe. Where the bladder riſes, and can be diſtinctly felt above the pubes, we ſhould in general prefer making the puncture from that point, as we know it may be done with ſafety and advantage. And one objection to the operation, viz. the effuſion of urine into the cellular membrane, and conſequent ſuppurations, may be avoided by allowing the canula of the trocar to remain till the parts are ſufficiently conſolidated, inſtead of paſſing a flexible and ſmaller one, as is uſually done, which allows the urine to eſcape between it and the wound. If, however, the parts about the neck of the bladder are found, while the perception of the viſcus above the pubes is indiſtinct, the puncture may be made from the rectum.

The *œſophagus* alſo is liable to a contraction of its internal membrane, forming a ſpecies of ſtricture ſimilar to thoſe of the urethra, which may be relieved by the bougie and by the cauſtic.

This ſpecies of ſtricture is generally ſituated in that portion of the œſophagus which lies immediately behind the cricoid cartilage of the larynx; it conſiſts of a tranſverſe fold of the internal coat, which, projecting like a valve, obſtructs the canal in different degrees. An engraving is annexed, which conveys a very accurate idea of the nature of this ſtricture. The diſeaſe, ſuſpected from the ſymptoms, can only be accurately aſcertained by paſſing a bougie, which may retain an impreſſion of the ſtricture. 'If the end of the bougie retains its natural form, or nearly ſo, and there is an indentation like the mark of a cord on its ſide, whether all round or only partially, he may decide that the diſeaſe is a ſtricture; but if, on the other hand, the bougie paſſes without any difficulty to the diſtance of 7½ inches, and, when brought back, the point has an irregular jagged ſurface, it is equally clear that the diſeaſe is an ulcer on the poſterior ſurface of the œſophagus.'

Of this diſeaſe ſix caſes are related; one was relieved by the common bougie, three by the uſe of the cauſtic, and two terminated fatally. A caſe is added, of ſtricture in the rectum, to which the cauſtic was applied with advantage.

IV.

IV.

Surgical Obſervations, containing a Claſſification of Tumours, with Caſes to illuſtrate the Hiſtory of each Species; an Account of Diſeaſes which ſtrikingly reſemble the Venereal Diſeaſe; and various other Caſes illuſtrative of Different Surgical Subjects. By John Abernethy, F. R. S., &c. London, 1804. 8vo. pp. 263.

Mr Abernethy's connexion with St Bartholomew's Hoſpital, affords him ample opportunity of extending his obſervations to many important ſubjects connected with his profeſſion. His merits as an accurate obſerver and practical writer, are already well known to the public; nor will the preſent volume of Surgical Obſervations derogate any thing from the reputation he has already obtained.

The embarraſſment and difficulty which generally attend the treatment of tumours, from the want of diagnoſtic characters by which the different ſpecies may be diſtinguiſhed and named, imperiouſly called for ſome arrangement or claſſification. This defect Mr Abernethy has attempted to ſupply. It is, however, much to be regretted, that the external characters of tumours could not have been made the baſis of the claſſification. But theſe are not ſufficiently marked, nor are they always indicative of their anatomical ſtructure and particular nature. And thus, the chief advantage of deſcription and arrangement muſt, for the preſent at leaſt, be poſtponed. But, the ground-work being once laid, future obſervation may enlarge our knowledge, and enable us to trace the connexion between the external characters and internal ſtructure of tumours, ſo that the former may become ſigns of the particular nature and tendency of each.

The term *tumour* may have been looſely employed by noſologiſts; but whether Mr Abernethy's definition, which reſtricts the ſurgical ſignification of tumours to 'ſuch ſwellings as ariſe from any new production which made no part of the original compoſition of the body,' be caculated to convey a more accurate and preciſe notion, we are very doubtful. If the definitions of former writers have been too vague, this ſurely is too limited. It excludes (as indeed Mr Abernethy acknowledges) all ſimple enlargements; and hence many glandular ſwellings, univerſally conſidered as tumours, and demanding the ſame treatment and operations, as thoſe comprehended in the definition. There are glandular tumours, in which it would be difficult to ſay what was original, or what the new growth; although indeed, in many caſes, 'the diſeaſe of the gland ſeems to produce an entire alteration of ſtructure in the part, the natural organization being removed, and a new-formed diſeaſed ſtructure ſubſtituted in its place.' Oſſeous tumours, we may obſerve, ſometimes ſpring from bone, and fat ones are found imbedded in the adipoſe membrane. Here, then, are tumours, new productions, but ſimilar to the compoſition of the part whence they originate. Every tumour may be ſaid perhaps to be a new production; but this may be either the ſame, or different from the original compoſition of the body. In definitions, it is prudent, nay, it is neceſſary, to keep all opinion or theory out of ſight.[*]

Mr Abernethy's definition may probably be derived from his theory of the formation of tumours. He attributes their formation to the effuſion and organization of coagulable lymph. It is poſſible that this may be the origin of ſome tumours; and that, in this way, an unorganized concrete may become a living tumour, which derives its nouriſhment from the ſurrounding parts, but lives and grows by the peculiar action of its own veſſels. But the effuſion of coagulable lymph is not a neceſſary, and perhaps not a common ſtep in this proceſs. Many tumours, eſpecially thoſe beginning in glandular parts, owe their very firſt formation to a diſeaſed action of the neighbouring veſſels; the gland is enlarged, its natural functions are deranged, and new parts are ſecreted. In every tumour, in every caſe of diſeaſed ſtructure, much more is to be attributed to vaſcular action, than to the mere organization of effuſed lymph. But let us ſuppoſe a tumour to have this origin; let us grant the fortuitous effuſion of coagulable lymph; let veſſels ſhoot into it, and let it be organized: with this organization of the effuſed lymph the tumour ſhould be completed, it ſhould admit of no farther growth, of no farther change, unleſs the veſſels aſſume a new action, extend and ſecrete, and depoſite as they extend. It is much more probable, then, that tumours owe their origin to the ſame actions by which they are continued and increaſed, than to the ſimple organization of effuſed lymph. Mr Abernethy does indeed acknowledge, that when tumours form and grow, there exiſts an increaſed action in the adjacent veſſels; and therefore he obſerves, that our firſt curative indication will be, 'to repreſs as much as poſſible this unuſual exertion of the veſſels.' And there are no means, he continues,

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[*] 'On appele,' ſays De La Motte, 'on appele en Chirurgie Tumeur contre-nature, une eminence au corps, qui intereſſe ou bleſſe l'action de quelque partie.' The definition is not unexceptionable; yet, from the circumſtance juſt mentioned, how much better is it, than that given by Sagar—'Tumores a ſolidis auctis per ſuccum nutritium copioſiorem advectum, &c. in hos converſum!'

tinues, more rational in theory, or more efficacious in practice, than thoſe of taking away the two great cauſes of animal actions, the blood and heat of the diſordered part, by leeches, and 'by the application of folded linen, wetted with ſedative lotions.'

If the growth of the tumour be by theſe means ſuſpended, the next indication will be, to promote the abſorption of the new formed ſubſtance, by ſtimulating applications, by frictions, preſſure, electricity, rubefacients, &c.

In his claſſification of tumours, Mr Abernethy ſuppoſes that they may form an order in the claſs of local diſeaſes in a ſyſtem of noſology.

The order may then be divided into genera; and the firſt genus, from its obvious character, may be denominated *Sarcoma*, or tumours having a firm fleſhy feel.

The ſpecies enumerated are, Common, Vaſcular, or Organized Sarcoma; Adipoſe Sarcoma; Pancreatic Sarcoma; Cyſtic Sarcoma; Maſtoid or Mammary Sarcoma; Tuberculated Sarcoma; Medullary Sarcoma; Carcinomatous Sarcoma.

1. *Common, Vaſcular, or Organized Sarcoma.* This is the moſt ſimple kind of tumour, and ſeems to be compoſed of the gelatinous part of the blood rendered more or leſs vaſcular. It is organized throughout, but without any diſtinguiſhable peculiarity of ſtructure. When it has attained a conſiderable ſize, the ſuperficial veins appear remarkably large.

Theſe tumours have but little ſenſation. They ſometimes, though rarely, ſuppurate; but grow till the ſkin ulcerates, and expoſes the new-formed ſubſtance, which ſloughs and falls off, and thus the diſeaſe is ſometimes got rid of; 'but ſuch is the conſtitutional irritation attending this proceſs, and the diſguſting fœtor and frightful appearance of the part, that the ſurgeon generally recommends, and the patient ſubmits to its removal at this juncture.'

A caſe is ſubjoined, marking the progreſs of ſuch a tumour of uncommon ſize, on the inſide of the knee, and covering the tibia, where amputation appeared the only means of preſerving life. The tumour, however, after the amputation, was found to have no connexion with the bone or joint on which it lay.

2. *Adipoſe Sarcoma.* This ſpecies, though generally formed in the midſt of cellular and adipoſe ſubſtances, has, like other tumours, according to Mr Abernethy, its origin from coagulable lymph. A pendulous tumour of this kind has been known to grow by a narrow neck from the peritonæum. Theſe tumours are always ſeparated from the contiguous parts, by a thin capſule of common cellular ſubſtance. Their adheſion is very ſlight, the

principal connexion being formed by veſſels, and theſe commonly very minute, ſo that little or no diſſection is required for their ſeparation;—no tumours are ſo eaſily removed. Sometimes, however, when inflammation has been induced, the capſule becomes thickened, adheſions are formed, and the removal of the tumour is rendered more difficult. The Adipoſe Sarcoma often attains a very conſiderable ſize. A hiſtory is given of one weighing between 14 and 15 lib. ſucceſsfully removed from beneath the faſcia of the thigh.

3. *Pancreatic Sarcoma.* So named from its reſemblance in colour and texture to the Pancreas. It is made up of irregularly ſhaped maſſes, connected by a fibrous ſubſtance of a looſer texture. It is ſometimes formed in the cellular ſubſtance, but more frequently in the female breaſt. A caſe is mentioned of ſuch a tumour occurring in the lymphatic glands, beneath the lower jaw. The Pancreatic Sarcoma is commonly indolent, and ſometimes leſſens in bulk by judicious treatment; ſometimes, however, eſpecially in the breaſt, it is more irritable, is accompanied with lancinating pains, produces an inflammatory ſtate of the ſkin, and ſwelling of the axillary glands.

4. *Cyſtic Sarcoma.* This ſpecies contains cells or cyſts. It ſometimes occurs as a diſtinct tumour; but is more frequently met with in the teſtis and ovary. The ſides of the cyſts are very vaſcular. The diſeaſe is correctly repreſented by Dr Baillie; (Faſc. 8. plate 8. fig. 2.) Such a tumour, conſiſting entirely of an aſſemblage of cells filled with a watery coagulable fluid, was removed from the face of a boy by Sir Charles Blicke. In the teſtis, theſe cyſts ſometimes contain a caſeous ſubſtance, of a yellowiſh caſt, and unctuous appearance.

5. *Maſtoid, or Mammary Sarcoma*—Strikingly reſembles the mammary gland in colour and texture. It is met with in the midſt of adipoſe tumours, and ſometimes as a diſtinct tumour; ſometimes alſo in glandular parts. In ſome caſes, it is of a malignant nature, degenerating into an untractable ſore, and communicating diſeaſe to the ſurrounding parts. Hence, Mr Abernethy has placed this tumour between thoſe which ſeem to poſſeſs no malignity, and thoſe which follow, and which are of a very deſtructive nature.

6. *Tuberculated Sarcoma.* It conſiſts of an aggregation of ſmall, firm, roundiſh tumours of different ſizes and colours, connected together by a kind of cellular ſubſtance. An engraving of tuberculated liver in Dr Baillie's plates expreſſes well the appearance of this kind of Sarcoma: (Faſc. 5. plate 2.) The inſtances met with by Mr Abernethy have been chiefly in the

lymphatic glands of the neck. The tumours ulcerated, became painful and untractable ſores, and deſtroyed the patient. This diſeaſe ſhews a very malignant nature.

7. *Medullary Sarcoma.* This is the tumour found in the teſtis, and diſtinguiſhed by the name of ſoft cancer. It is however very different from cancer in its nature and progreſs. It is commonly of a whitiſh colour, ſometimes of a browniſh red; is of a pulpy conſiſtence, ſomewhat reſembling the appearance of brain. Not entirely confined to the teſtis, it ſometimes occurs in other parts. An example is given of ſuch a tumour in the front of the thigh. Deſtructive in its nature, it communicates the diſeaſe, and affects the abſorbents and lymphatic glands, even thoſe out of the courſe of abſorption, to a very conſiderable extent.

8. *Carcinomatous Sarcoma.* Without attempting a full or diſtinct hiſtory of Carcinoma, Mr Abernethy here preſents us with many valuable obſervations on this dreadful diſeaſe. He deſcribes its hiſtory and anatomical ſtructure, and compares it with other reſembling diſeaſes. With regard to the anatomical ſtructure of carcinoma, it is very difficult, he remarks, to convey any correct idea by words, or even by drawings. The diſeaſed part is peculiarly hard, and intermixed with firm whitiſh bands, as repreſented by Dr Baillie. Theſe bands ſometimes extend in all directions, like rays from a centre; ſometimes they interſect the tumour irregularly; ſometimes they form cells containing a pulpy matter, of various colour and conſiſtence.

Next to the Sarcoma is placed the genus of *Encyſted Tumours.* They are allied to the former in appearance, but may in general be diſtinguiſhed by a regularity of ſurface and ſhape, and a pulpineſs to the touch. The cyſts vary in thickneſs. Sometimes they adhere to the contiguous parts; at other times, they are ſo looſely connected, that, when laid bare, the whole tumour ſtarts out. That the interior ſurface ſecretes the contents of theſe cyſts, Mr Abernethy thinks is obvious, from the obſervation that the cyſt of a wen which has burſt, or been punctured, will repeatedly fill with the ſame ſubſtance which has been evacuated. The cyſts, however, are ſometimes more irritable, and, when opened, ſhew little diſpoſition to heal, but ſhoot out fungus, and occaſion much diſtreſs, fever, and fatal irritation. Encyſted tumours have been named from their contents, atheromatous, meliceròus, &c.

Cyſts, too, ſometimes ſecrete a ſubſtance like nail or horn, which protrudes and hardens. Hairs alſo grow from their interior ſurface; a caſe not unfrequently met with in the ovary.

Laſtly, particular cyſts, reſembling thoſe of abſceſſes, irregular in ſhape, according to the form of the parts amongſt which they are produced, are found containing a kind of ſerum and hydatids, and ſometimes ſmall granular white bodies reſembling pearl barley.

Another genus of tumours is the *Oſſeous.* They commonly originate from bone. They are found pendulous in the cavities of joints, and occur alſo, though not often, in other parts. A caſe is given of a tumour in the ham, compoſed of coagulable and vaſcular ſubſtance, interſperſed with a large quantity of bony matter.

We have thus endeavoured to preſent our readers with an abſtract of Mr Abernethy's claſſification of tumours. But the original muſt be conſulted for many valuable remarks and inſtructive caſes, which our limits forbid us noticing here.

On Diſeaſes reſembling Syphilis.

It were greatly to be wiſhed that, in calling the attention of practitioners to theſe caſes, characters could have been pointed out by which they might be known, and diſtinguiſhed from the venereal diſeaſe. But here, the reſemblance is ſo perfect, that every reader muſt have pronounced them ſyphilitic, had he not been informed by Mr Abernethy that they recovered without the uſe of Mercury.

Chancres of various appearances, followed by bubo, and ſucceſſively by deeply ulcerated tonſils, copper-coloured blotches, coronæ veneris, and nodes of the bones, are the ſymptoms of the diſeaſes now ſubmitted to our conſideration as reſembling ſyphilis. The only circumſtance in which they ſeem to differ, is their getting well ſpontaneouſly; to which perhaps may be added ſome anomalies in the ſecondary ſymptoms, or in the order of their appearance. Such anomalies, however, are occaſionally obſerved alſo in the venereal diſeaſe itſelf. Even Mr Abernethy, though he appears often to have pronounced on the character of theſe diſeaſes with the moſt perfect confidence, and that too in oppoſition to the equally decided opinion of other medical men, who aſſerted their ſyphilitic nature with a confidence proportioned to their profeſſional ſkill and accuracy of obſervation, confeſſes that he has not been able to diſcover any appropriate character by which the diſeaſe may be detected. 'The fictitious diſeaſe in appearance ſo exactly reſembles ſyphilis, that no obſervation, however acute, ſeems to be capable of deciding upon its nature.'

The ſpontaneous cure, then, is the only criterion by which the fictitious diſeaſe can be diſtinguiſhed from ſyphilis.

If the diſeaſes, however, ſo perfectly reſemble each other in all other particulars, why conſider them as eſſentially different? Is it then ſo certain that the venereal diſeaſe admits of no cure but from Mercury?

'I have aſked the opinion of ſeveral ſurgeons of eminence and abilities,' ſays Mr Abernethy, 'reſpecting this queſtion, Whether conſtitutional ſymptoms of ſyphilis do ever ſpontaneouſly mend? And no one has decidedly replied in the affirmative, whilſt all, without heſitation, agreed that they were generally progreſſive till checked by the effect of Mercury.' But the queſtion is already begged, by the avowal, that the only criterion of the fictitious diſeaſe is its ſpontaneous cure; for thus, every caſe which gets well without Mercury, may be ſaid to be not ſyphilitic.

To judge by appearances, theſe diſeaſes do not differ from ſyphilis. Like it, they ariſe from, and are propagated by, impure ſexual intercourſe. Their ſymptoms and progreſs are the ſame, or ſo ſimilar, that they cannot, it is confeſſed, be diſtinguiſhed from it. Many, therefore, will ſtill be diſpoſed to conſider theſe diſeaſes as venereal, though cured ſpontaneouſly, or without the uſe of Mercury.

At any rate, till ſome other criterion be pointed out, no uſeful practical leſſon can be deduced from ſuch anomalies; and the ſafeſt rule muſt ſtill be the old one, to claſs diſeaſes by their external and obvious characters, where no eſſential difference can be marked; and, in the preſent caſe, to adminiſter Mercury till the ſymptoms yield, or till we are convinced that no good can be derived from its uſe. Much leſs danger, we are diſpoſed to think, will reſult from this conduct, than from the irreſolution and delay which the apprehenſion of two diſeaſes ſtrikingly reſembling each other, yet eſſentially different, muſt occaſion in the mind of a leſs experienced practitioner than Mr Abernethy.

Theſe remarks, however, we would wiſh to be underſtood as applying only to diſeaſes ſtrictly reſembling ſyphilis; for we are aſſured that there are many primary ſores affecting the genitals which are not ſyphilitic, which may be often characterized and diſtinguiſhed from the venereal chancre. Such are the ulcerating phagedenic ſores, and thoſe which ſpread by ſloughing. Yet, even here, we cannot always pronounce dogmatically. And our confidence in our diagnoſis will be much leſſened, if Mr Abernethy's obſervation be juſtified, 'that the venereal poiſon can be conveyed into the conſtitution, and contaminate it through the medium of a ſore, the general actions of which are probably not venereal.'

The other ſurgical obſervations contained in the preſent volume, are, Caſes and Remarks on injuries of the head; on Aneuriſm; on the operation of Puncturing the urinary bladder; on the Tic Douloureux; on the removal of looſe ſubſtances from the knee joint.

In a former publication, Mr Abernethy had endeavoured to direct the attention of practitioners to ſome caſes of injuries of the head, attended with depreſſion, which, however, did not require the application of the trephine, proving that ſlight preſſure on the brain is not productive of thoſe dreadful conſequences commonly apprehended. The opinion which Mr Abernethy then entertained of the frequent application of the trephine, has been confirmed by many caſes which have ſince occurred to him.

By theſe obſervations, he does not wiſh to diſcourage altogether the operation of trephining, which he acknowledges to be often a neceſſary and ſucceſsful operation, but ſimply to ſtate the circumſtances of caſes of fracture of the cranium with ſlight depreſſions, which do well without elevation; and to ſhow, that where it is not neceſſary, it muſt be hurtful, by increaſing the tendency to inflammation, the chief danger to be apprehended in ſuch caſes.

'Had I been, in the former publication, writing expreſsly on the operation of the trephine, I ſhould have ſtated it as my opinion,' he adds, 'that no conſiderable depreſſion of the cranium ought to be ſuffered to remain; and that every hazard ſhould be encountered, rather than ſuch a degree of preſſure ſhould be ſuffered to remain, as might be productive of future inflammation and diſeaſe, or diſturb the functions of ſo important an organ as the brain. The object of my laſt publication was to ſhow, as far as my opportunities of obſervation enabled me, what appeared to be the kind of caſes in which it would be injurious to apply the trephine, and what caſes would do well without the operation.'

The great ſecondary danger to be apprehended from injuries of the head, is inflammation; and hence bloodletting, and the other antiphlogiſtic means have been freely employed in almoſt every caſe. Of late, indeed, one exception has been made to this rule; and in the caſe of what has been called concuſſion of the brain, the ſtimulating plan has been recommended. Mr Abernethy, however, in his former Eſſays, had ſhown by caſes, the propriety, and indeed the neceſſity, of a free uſe of the lanto an extenſive collection of blood behind the peritonæum, extending from the diaphragm downwards, and communicating with the aneuriſmal ſac, from which the blood appeared to have burſt in the direction of the interval between the internal iliac and pſoas muſcles. The operation, we may remark, was too long delayed, from a want of confidence in the powers of the collateral arteries to carry on the circulation: hence the patient was allowed to languiſh in the hoſpital during two months, and the operation was not undertaken till the aneuriſmal tumour ſeemed ready to burſt, and therefore under the moſt hopeleſs circumſtances. The patient's ſufferings had become intolerable, and the whole limb was largely œdematous.

The urinary bladder may be punctured from different points; from the perinæum, from the rectum, and from above the pubes. Mr Home has ſhown the advantages and ſafety of the operation from the rectum, which appears the moſt eligible where the bladder is contracted, and does not riſe ſo as to be felt above the pubes. But there are caſes alſo, in which the puncture from the rectum cannot be ſafely performed, on account of the enlargement of the proſtates, and diſeaſed ſtate of the neck of the bladder. And Mr Abernethy farther obſerves, that, in ſome caſes, the perception of the bladder from the rectum is ſo indiſtinct, that he has been deterred from puncturing it there; and in one inſtance, having made a diviſion in the perinæum, and paſſed his finger beneath the arch of the pubes, he could obtain no ſuch diſtinct perception of the bladder as could authoriſe him to puſh forward the trocar. He thinks that there is frequently this receſſion of the bladder from the perinæum, which then aſcends proportionally higher into the abdomen. His object therefore, here, is to recommend, in ſuch caſes, the puncture of the bladder above the pubes. He has performed it in a great many inſtances, and has never ſeen any effuſion of urine into the cellular ſubſtance, or other bad conſequences reſult from the operation; nor, if rightly performed, are ſuch events likely to happen.

The face is the uſual ſeat of Tic Douloureux. In the caſe given in this volume, however, the diſeaſe was in the ring finger of the left hand. The pain recurred at irregular intervals, and extended a conſiderable way along the nerves of the arm. After the patient had endured this painful affection for eleven years, Mr Abernethy, who was conſulted, adviſed the ſection of the nerve of the finger originally affected, which was accordingly done oppoſite to the ſecond joint. The violence of the diſeaſe was leſſened, but not altogether removed. It has now, however, Mr Abernethy informs us, after nine months, become very trivial, while the natural ſenſe of feeling in the finger, at firſt deſtroyed by the ſection of the nerve, is gradually returning. Thus, though the communication between the originally diſeaſed nerve and the ſenſorium was interrupted, the general irritable actions which had been excited did not immediately ceaſe, though they gradually ſubſided. On the other hand, the natural ſenſe of feeling, inſtantly loſt by the removal of a portion of the nerve, was proportionally recovering.

When looſe ſubſtances are formed in the knee joint, and ſlip between the condyles of the femur and tibia, they give riſe to a train of very diſtreſſing ſymptoms; but, when lodged on either ſide of the patella, they occaſion but little inconvenience. To keep them ſtationary in this poſition, a bandage has been recommended, and found uſeful in many inſtances; but the bandage is ſometimes of no avail, as in the caſe related by Mr Abernethy, where the bodies floated in a collection of fluid within the joint. They were removed by an operation, and the patient recovered. Theſe bodies are eaſily brought to the inner ſide of the joint, and may be fixed by the points of the fingers on the internal condyle of the femur, which, Mr Abernethy obſerves, preſents 'an extenſive and nearly plain ſurface, which terminates in front, and, at its upper part, by an edge which forms a portion of a circle.' —' If the points of the fingers be firmly preſſed upon this edge, ſo as to form a kind of line of circumvallation round theſe bodies, they cannot paſs into the joint in this direction, nor can they recede in any other, on account of the tenſe ſtate of the internal lateral ligament. Here, theſe ſubſtances are near the ſurface, and may be diſtinctly felt; and there is nothing to be divided in order to expoſe them, but the integuments, faſcia, and capſule of the joint.' Mr Abernethy therefore prefers this ſituation to all others; and in the caſe related, they could not, he obſerves, have been ſecured in any other.

V.

Nouveau Dictionaire d'Hiſtoire Naturelle, appliquée aux Arts, principalement à l'Agriculture et à l'Economie rurale et domeſtique. Par une Société de Naturaliſtes et d'Agriculteures. Avec des Figures tirées des trois Regnes de la Nature. xxiv. Tomes. 8vo. A Paris, chez Deterville, 1803 et 1804.

NATURAL hiſtory is a ſcience of ſuch immenſe extent, its objects are ſo multifarious, its applications ſo unlimited, and the ſtudy of its various branches ſo independent of each other, that it affords an admirable example of the good effects to be derived in ſome inſtances from the diviſion of intellectual labour. For its preſent advanced ſtate it is almoſt entirely indebted to thoſe who have confined their whole attention to a ſmall part of ſo wide a field: while each portion is thus carefully laboured, the whole becomes highly cultivated, and the total produce is increaſed. But it is not enough that the ſtock of information be merely augmented; it muſt be placed within the reach of thoſe who wiſh to partake of it. For this purpoſe ſcientific dictionaries are admirably adapted. They are a ſpecies of public market, to which each contributor brings the fruits of his individual labours, and in which, variety as well as excellence may be found by thoſe who reſort to them for information.

The work before us is of this deſcription. The articles relating to man, quadrupeds, birds and cetaceous animals, are ſupplied by Sonnini, Virey, and Vieillot; thoſe on the veterinary art and domeſtic economy, by Parmentier, Huzzard, and Sonnini; thoſe on fiſhes, reptiles, molluſcæ and worms, by Boſc; thoſe on inſects by Olivier and Latreille; thoſe on botany and its applications to the arts, agriculture, gardening, rural and domeſtic economy, by Chaptal, Parmentier, Cels, Thouin, Du Tour, and Boſc; and thoſe on mineralogy, geology, meteorology and phyſics, by Chaptal, Patrin and Libes.

Such is the liſt of contributors repeatedly expoſed in various parts of this work; but it is not complete. In the preface we are told that various articles on vegetable phyſiology, on the diſeaſes of plants and the means of curing them, and on different parts of gardening, have been drawn up with much ability by Tollard, a ſavant of diſtinguiſhed merit. Why then is his name always omitted from the liſt of authors? Tollard, it appears from the advertiſement, is a nurſery-man, a floriſt, a gardener; but ſurely theſe profeſſions do not degrade a citizen of France ſo much, that his fellow-labourers in the field of ſcience, although they reckon amongſt their number members of the National Inſtitute, and even the Miniſter of the Interior, ſhould be aſhamed of his cooperation. Be this as it may, their aſſociated induſtry and talents have produced a work replete with information. It is not however to be ſuppoſed that equal attention ſhould be paid to all the applications of natural hiſtory; and, unfortunately, that in which it ſeems to be moſt deficient, is its application to the ſcience of Medicine, although it muſt be confeſſed, that on ſome of the principal articles of the Materia Medica the moſt recent information is introduced. As an example of the manner in which this compilation is made, we ſhall give an analyſis of the article Ipecacuanha, written by Du Tour.

After giving the vague information which is to be found in every work on the Materia Medica, he extracts entire a very good memoir by Decandolle on the different ſpecies of Ipecacuanha, inſerted in the Bulletin des ſciences, N° 64, in which he informs us, that in South America, Ipecacuanha merely means vomiting root, and that the plants which we confound under that name belong to different families; but it is certain, that the Ipecacuan moſt commonly employed is got from the family of the Rubiaceæ. Mutis ſays, that in Peru, it is got from the Pſycotria Emetica. Brotero has lately publiſhed in the Linnean Tranſactions, that in Braſil it is got from a new genus of the Rubiaceæ which he calls Callicocca, the ſame which was firſt denominated by Aublet, Tapogomea, and afterwards by Swartz, Cephaëlis. This plant is the ſame with that of which an imperfect figure was given in Woodville's botany, Vol. III. Thus it is probable that the Ipecacuan of Peru and Braſil come from different plants, the former being the grey, and the latter the brown variety of the ſhops. Amongſt the violets there are alſo ſeveral emetic ſpecies which are alſo called Ipecacuan; the Viola Parviflora, V. Ipecacuanha, V. Calceolaria. Of theſe the firſt only is ſometimes mixed with the Ipecacuan of commerce; the others are, in Europe, only preſerved in the cabinets of the curious, under the name of White Ipecacuan. The ſame title is alſo given to ſome of the Apocyneæ, to the Cynanchum Ipecacuanha, C. Tomentoſum, and to the Aſclepias Curraſavica. It is alſo ſometimes given to the Euphorbia Ipecacuanha, Dorſtenia Braſilienſis and D. Ariſolia. Theſe roots operate in very different doſes. The doſe of Cynanchum Ipecacuanha is 22 grains, of the Pſycotria Emetica 24, of the Viola Calceolaria 60 to 72, and of the Viola Ipecacuanha from one to three drachms. Theſe differences ſhew the neceſſity of attending more particularly to the different varieties of Ipecacuan. M. Du Tour adds, that in St Domingo ſeveral ſpecies of Ruellia which produce vomiting, are known by the title of falſe Ipecacuan; and, after a very ſhort account of its employment as an emetic, he concludes this article by another long extract from the Bibliotheque Phyſico-Economique, in which Daubenton empirically recommends its daily uſe in ſmall doſes as a ſtomachic, to perſons from forty to forty-five years of age.

In the alphabetical arrangement of this dictionary the French names are adopted. This may render the work more popular in France, but it is extremely troubleſome to foreigners, very few of whom can be ſuppoſed to be acquainted with them; and indeed, it appears to us that it would be better, on every account, to follow the ſyſtematic names in all ſcientific dictionaries. To remedy this defect however, as much as poſſible, in the laſt volume we have a very complete Latin index, with references to the volume and page where the articles are to be found. Beſides this, the laſt volume conſiſts entirely of the explanation of the characters uſed in the deſcriptions, illuſtrated by plates and ſynoptical tables of the animal, vegetable, and mineral kingdoms. The plates, which are numerous, are very neatly executed, and add to the value of the work.

VI.

Des Végétaux Réſineux, tant Indigenes qu'Exotiques; ou Deſcription Complète des Arbres, Arbriſſeaux, Arbuſtes et Plantes qui produiſent des Réſines: avec les Procédés pour les extraire; l'indication détaillée de leurs Propriétés et Uſages dans la Médecine, la Pharmacie, l'Art Vétérinaire, la Peinture, les Vernis, la Teinture, la Parfumerie, l'Economie Domeſtique, et en général dans tous les Arts utiles et agréables; on y joint les Synonymes; les Noms vulgaires en Sept Langues; la Culture, &c.; et un Mémoire de J. Nauche, Médecin, membre de pluſieurs Sociétés Savantes, ſur la manière dont les Subſtances Réſineuſes agiſſent dans l'Economie animale. Par F. S. Dupleſſy, Secretaire perpétuel de la Société Académique des Sciences de Paris. IV. Tomes. 8vo. A Paris, chez Delalain fils, 1802.

WE ſhould not have noticed this work, if we did not conceive it to be our duty to prevent our readers from being as much diſappointed

appointed as we were by its pretenſions to excellence. The author is not only proud of the novelty of his undertaking, but ſeems perfectly ſatisfied with the manner in which he has executed it. ‘ L'ouvrage qu'on préſente au Public manquoit aux Sciences, aux Arts, au Commerce, et à la Littérature : ceux qui s'occupent des uns ou des autres, et qui y cherchent des réſultats utiles ou agréables, doivent ſans doute le déſirer. Il n'exiſte, dans aucune langue, un Traité complet ſemblable à celui-ci,’ &c. On examination, this work without an equal proves to be a very ordinary compilation, in which every thing that is good is tranſcribed from others; many of the beſt ſources of information are overlooked; and whatever belongs excluſively to our author is poor indeed. His failure does not ſeem to be owing to want of induſtry, but to his having undertaken a work for which he is by no means qualified. In his table of ſynonymes the Linnæan or ſyſtematic names are looked for in vain; and as *Engliſh* names of vegetables we find, A tree compagni, S. Joannis kraut, Setvoal, Maſtre of delle, Graven tree ſavintre, Böpffen, Kamps, Dauce, Negel, Spinade Euphorbian, Sowarts ſticliwurg, A vood of Rhodes, Aſp bleu popier, A tree to blind, &c. Other languages are not better; and to this jargon we are told by the author that ‘ il s'y eſt prêté d'autant plus volontiers, que ſon ouvrage étant abſolument neuf chez tous les peuples, les lecteurs etrangeres ne verront pas avec indifférence une Nomenclature qui leur ſoit partiellement connue.’ Very partially indeed will it be known to them; for we doubt very much that any Engliſhman would recognize his own language in M. Dupleſſy's polyglot catalogue, if he had not very prudently prefixed *Anglais* each time he introduced it.

But the author's principal boaſt, that it is the moſt *complete* work on reſinous vegetables in any language, is true, at leaſt in one ſenſe; for we believe that no other work ever ſwelled the catalogue of reſinous vegetables in ſo frivolous and uſeleſs a manner. Becauſe camphor has ſome properties in common with reſin, the trees which yield camphor are included; and becauſe ſome eſſential oils depoſite cryſtals which are ſuppoſed to be camphor, all plants and herbs which yield theſe oils are treated of at full length. In the ſame way the author might have comprehended the whole Syſtema vegetabilium.

The firſt part treats of all thoſe vegetables which yield camphor.

The ſecond, of thoſe which furniſh reſinous juices which are uſed in the arts as well as in medicine, and whoſe roots or fruits are applied to economical purpoſes.

The third, of thoſe which furniſh reſinous matters uſed only in medicine.

The fourth, of thoſe which have reſinous juices, and are more immediately employed in the arts of dyeing or painting, to which is added an account of the caoutchouc plants.

We do not think it neceſſary to point out the errors of this outline of the arrangement. In its detail it is equally liable to objection; and the whole work, ſo far as we have examined it, by no means warrants the opinion entertained of it by its author.

'Il eſt nouveau, et manque abſolument à notre litterature et à celle des étrangeres.'

VII.

Memorie della Società Medica di Emulazione di Genova. Tomo I. Primo Quadrimeſtre. 8vo. Genova 1801.

It is with conſiderable pleaſure that we proceed to make our readers acquainted with the labours of this Society, not only on account of the intrinſic value which ſome of the eſſays may poſſeſs, but becauſe they in ſome degree inform us of the ſtate of medicine in a country with which almoſt all communication has for ſome time paſt been interrupted. We have received the firſt, third, and fourth Numbers, and ſhall endeavour to procure the ſecond, and have them tranſmitted to us in future with as much regularity as poſſible. The following papers are contained in the firſt Number, to which is prefixed an addreſs from the Preſident Mongiardini on the utility of Medical Societies, the objects of their inſtitution, and the means of attaining them.

On Darnel; Lolium temulentum, Lin. By V. Landau, B. Mojon, & F. Silvano.

During the ſcarcity occaſioned by the blockade of Genoa in 1800, ſome ſpeculators in grain were atrocious enough to ſubſtitute the darnel for wheat. The fatal conſequences of this piece of villany gave riſe to the paper before us. After deſcribing its botanical characters, our authors give its analyſis compared with that of wheat. It contains leſs gluten and more ſtarch. A family of five individuals having eaten of flour bought in the public market, were all of them ſoon after ſeized with dimneſs of ſight, confuſion of ideas, proſtration of ſtrength, trembling, reſtleſſneſs,

neſs, depreſſion of ſpirits, and cold rigors, eſpecially in the extremities. Theſe were moſt ſevere, attended with a diſpoſition to vomit, and continued longeſt in the maid-ſervant, who had eaten the greateſt quantity. Other examples of the ſame kind occurred. Some very inconcluſive experiments were made on cats and dogs, to aſcertain whether theſe effects were produced by an admixture of darnel flour. It produced reſtleſſneſs and vomiting; but they could not be made to ſwallow a ſufficient quantity to produce more decided effects. Chickens eat darnel ſeeds with greedineſs, and without any bad conſequences.

On Vaccination. By Lewis Marchelli, Member of the National Inſtitute.

As one of the firſt publications in Italy on this intereſting ſubject, this paper is highly creditable to its author.

On a new Inſtrument for Meaſuring the Denſity and Combuſtibility of Fluids by means of the Refraction of Light. By Joſeph Mojon, Member of the National Inſtitute.

THIS inſtrument conſiſts of a hollow double convex lens filled with the fluid to be examined, whoſe refracting power is meaſured by the diſtance of the focus.

Obſervations on ſome Facts connected with Jaundice, and eſpecially on an Epidemic Jaundice. By Dr William Batt.

AFTER ſome obſervations on the cauſes of Jaundice, tending principally to ſhow that it ought not to be conſidered as a diſtinct genus in a ſyſtem of Noſology, but more frequently and properly as the ſign of a ſymptom, or of an accidental occurrence; thus the Jaundice, which is produced by the obſtruction of the coledic duct by a biliary concretion, ſo far from being a ſymptom of an idiopathic diſeaſe, the cauſe of the concretion, cannot be conſidered as a ſign of the exiſtence of a concretion, but only as a ſign of an accidental occurrence, viz. of its poſition with regard to the orifice of the duct. For the concretion may exiſt and lye in the bottom of the gall bladder without producing Jaundice.

Dr Batt next deſcribes a jaundice which was epidemic in Genoa and its vicinity, in 1792 and 1793. He ſaw the firſt patient in the end of September 1792, and the laſt towards the end of Auguſt 1793. He ſaw, in all, 43 caſes, the greateſt number of which occurred before the vernal equinox of 1793. The diſeaſe, although ſometimes ſufficiently troubleſome, was rarely dangerous. In the city of Genoa, only two died, and one of theſe not of the diſeaſe, but of the remedy; for, having taken ſome Ipecacuan as an emetic, it produced, by the efforts of vomiting, a fatal hæmorrhagy. The epidemic did not extend to the eaſt of Genoa, but along the coaſt to the weſt, as far as Nice, and it penetrated into Monferrato. In the greater number of caſes, fever occurred ſooner or later, but never ſeverely. It was generally preceded by rigors, and accompanied with pains reſembling rheumatiſm. Languor, heavineſs, and an uneaſy feeling frequently oppreſſed the patient three or four days before there was any appearance of jaundice, fever, or rheumatic pains; and, as well as the latter, they ſeldom laſted longer than four or five days. The red colour of the cheeks in thoſe who had it naturally, did not ſeem to be diminiſhed, although the reſt of the face was very yellow. The urine tinged the linen of a yellow colour. Recently excreted, it had an orange colour; but it ſoon became deeper and turbid, with a brick-coloured ſediment tinged with green. The ſtools were commonly ſcanty, but ſometimes frequent, and ſomewhat copious. In many, the fæces were of an argillaceous conſiſtence, and a cineritious ſublivid colour, and ſometimes did not exhibit the ſmalleſt veſtige of bile. The patients felt a ſenſation of fulneſs, eſpecially in the epigaſtric region, and the whole abdomen was ſomewhat turgid; and moſt of them complained of a painful ſenſation in the right hypochondrium, but neither intenſe nor very permanent. Hiccough appeared but ſeldom, and was not diſtreſſing. Almoſt all of them loſt their appetite, and ſome experienced a degree of weakneſs of ſtomach with ſome nauſea; but vomiting was very rare. They all complained more or leſs of laſſitude, weakneſs and indolence, and were reſtleſs, melancholy, and extremely iraſcible. Some had much thirſt; others little. Subacids were moſt commonly agreeable, as well as ſallads. In general, fleſh meat was nauſeated, but ſome ate fleſh and fiſh as uſual. Some complained of an uneaſy ſenſation of the ſkin, as if it were varniſhed over; but this ceaſed in three or four days, leaving ſometimes a conſiderable itchineſs. Others, who had not the former ſymptom, were diſtreſſed with itchineſs accompanied with a minute cutaneous eruption, or without it. Moſt of them remained out of bed during the whole diſeaſe, and many went about their affairs as uſual. The intenſity of the diſeaſe generally declined towards the ſeventh or ninth day, but the jaundiced colour, inſtead of diminiſhing ſo ſoon, frequently became more intenſe and deeper, remaining more or leſs evident to the fortieth or fiftieth day. In ſome, the diſeaſe ſeemed to abate the fifth or ſeventh day, and returned with greater violence the next day; but whenever it once ceaſed there was no relapſe. The cure was not difficult, and conſiſted chiefly in keeping the bowels eaſy, which was commonly done by Tartrite of potaſs. Thoſe in whom the fever was more ſevere, or who had greater thirſt, drank at pleaſure the Anti-emetic mixture of Riverius diluted, to which a little Mineral Anodyne liquor was ſometimes added. Calomel was ſometimes given as a purgative, and was the only medicine preſcribed.

To the account of this curious epidemic Dr Batt ſubjoins a caſe of jaundice, in which a gall-ſtone was found adhering to the gall-bladder, in ſuch a poſition that it never could have obſtructed the paſſage of the bile. This fact he ſupports by another, of an urinary calculus connected with the bladder by ſmall veſſels. Theſe obſervations are concluded by the detail of a caſe, in which the ſymptoms of the diſeaſe at laſt aſſumed a tertian type; and, on diſſection, a very ſmall abſceſs was found in the right lobe of the liver, which was very much ſwelled, and its colour much deepened with blackiſh ſpots.

On the Mechaniſm of the Luxation of the Lower Jaw. By Thomas Bertamino, Public Profeſſor of Anatomy and Surgery.

Our author, after ſimply mentioning that M. Petit miſtook the mechaniſm of this diſlocation, quotes the explanation of Dr Monro ſenior, and then expreſſes his aſtoniſhment why ſuch an opinion ever could have been adopted. His argument againſt it is, that when the mouth is opened, the coronoid proceſs is removed half an inch from the zygoma; and that as, in diſlocation, the mouth is ſtretched ſtill more, the diſtance muſt be greater. Therefore, the coronoid proceſs cannot have ſlipped under the zygoma. But our author forgets that, in diſlocation, the condyle is diſplaced and lodged before the tubercle of the temporal bone; ſo that the mouth cannot be ſhut on account of the preſſure of the coronoid proceſs on the anterior root of the zygoma. Our author's explanation, which ſcarcely differs from Petit's, that when the lower jaw is diſlocated, the muſcles which, in its natural poſition, ſhut the mouth, now rather tend to open it, does not at all account for the impoſſibility of ſhutting the mouth by external force, until the diſlocation be reduced.

Caſe of Epilepſy terminating fatally, produced by a Muſcular Calculus preſſing on a branch of the Sciatic Nerve. By Benedict Mojon and Marcellus Covercelli.

A man who had always enjoyed an excellent ſtate of health, was, in December 1798, ſuddenly ſeized with an acute pain in the poſterior part of the left thigh, and afterwards with a degree of torpor, which extended along all the leg. It ſoon ceaſed; but ſome months afterwards, returned, accompanied by convulſions of the left ſide, which laſted about a quarter of an hour. Theſe attacks became gradually more frequent, and more ſevere, the convulſions extending over all the body, and leaving the patient in a ſtate of ſtupor which laſted ſeveral hours. His ſtrength was gradually waſted, and at laſt he died in the hoſpital in April 1801. On diſſecting the muſcles of the left thigh, about a third from the bottom of the ſemi-membranous muſcle, a calculus of an irregular figure was found about the ſize of a nut, with a rough ſurface, which preſſed on a branch of the ſciatic nerve. That this was the cauſe of the epilepſy, the authors think is proved, both by the ſymptoms, and by the caſe of epilepſy cured by Short, by the extraction of a tubercle which preſſed on the tibial nerve; by the fatal caſe of Cappel, in which the par vagum was compreſſed by a ſimilar concretion; by De Haen's caſe, in which gangliform concretions adhered to the phrenic nerves; and by Hildanus's caſe of epilepſy produced in a girl by a glaſs globule penetrating into her ear.

Meteorological Obſervations made in Genoa in 1781. By Joſeph and Benedict Mojon.

On the Palſy of the Lower Extremities from diſeaſed Spine. By Peter Bonomi.

By this paper it appears that this diſeaſe has not been frequently obſerved in Italy; and that the obſervations of Pott regarding it are little known there. Mr Bonomi, however, has ſeen two caſes of it which terminated fatally, and one which he was treating ſucceſsfully by means of cauſtics. He gives a very accurate diſſection of one of the former, in which the bodies of three of the vertebræ were corroded or deſtroyed, and their place ſupplied by a caſeous matter; and concludes his paper with a general account of the diſeaſe, taken principally from Pott.

PART

PART III.

MEDICAL INTELLIGENCE.

Authentic Account of the Surgical Academy (Pepiniere) at Berlin. By D. Görcke, *Surgeon-General of the Pruſſian Army, and Director of the Academy.*

The late King Frederick William the Second, founded, on the 2d of Auguſt 1795, a Surgical Academy, conſiſting of three Staff-Surgeons, four Surgeons and fifty pupils, and deſtined it, in the firſt place, to receive the Surgical Staff of the Field Hoſpitals, which had acquired experience in the war with France, and to preſerve it to the country; and, in the next place, to provide for the Field-Hoſpitals, in future, a ſupply of well educated ſurgeons. Each pupil at that time received an allowance of ſeven dollars a month, and had to provide himſelf with board, and to pay for his education. But, from the circumſtance of the pupils not reſiding together, it was found impoſſible to look after them ſufficiently, or to ſuperintend their education properly.

On the 18th of Auguſt, this inſtitution was advantageouſly extended, a proper reſidence allotted for its members, and its chief object declared to be the improvement of the Surgical Department of the Army. Henceforward, it had to provide—

1. For the education of new ſerviceable ſurgeon's-mates (Company-ſurgeons).
2. For the farther improvement of the preſent ſurgeon's-mates.
3. For the ſupply of a number of good ſurgeons to ſerve as the baſis for the eſtabliſhment of field-hoſpitals in future.

According to this extended plan, the Surgical Academy conſiſts of the following members:

A curator.
A director.
An upper ſtaff-ſurgeon.
Four ſtaff-ſurgeons.
Nine upper ſurgeons.

Eighty-one pupils; beſides an unlimited and variable number of volunteers and company-ſurgeons.

The curator, at preſent Lieutenant-General Van Geuſau, is only conſulted on particular occaſions, when his interference is neceſſary.

The director of the inſtitution is commonly the ſurgeon-general of the army (at preſent M. Görcke). He conducts the whole, he appoints the ſurgeons, admits the pupils and volunteers, and ſends them to the army as company-ſurgeons.

The upper ſtaff-ſurgeon is ſubdirector. He ranks immediately under the director. He has to carry into effect the plans adopted by his ſuperior, and to divide the duty enjoined by them properly among the other members of the inſtitution. In the abſence of the director (for example, with the army in the field), he ſupplies his place.

The ſtaff-ſurgeons are next in rank. One of them is always appointed to attend the ſick in the Charité, and has the particular ſuperintendance of ſuch pupils as are in that hoſpital. Of the other three ſtaff-ſurgeons, one has the ſuperintendance of each department of the inſtitution. They aſſiſt in the ſcientific improvement, and direct the education of the pupils.

The upper ſurgeons are under the ſtaff-ſurgeons. They are alſo to be conſidered as governors of the pupils. To them the immediate ſuperintendance of their education is intruſted. They muſt accompany them to hear the lectures of the profeſſors; go over with them the inſtructions they receive in medicine and ſurgery; accurately obſerve the induſtry and economical management of their particular pupils; enforce cleanlineſs and good order; and muſt not entirely loſe ſight of them even during their hours of relaxation.

As upper ſurgeons, the director chooſes ſuch as are remarkable for the goodneſs of their morals, are well-grounded in the ſciences taught in the ſchools, poſſeſs the neceſſary knowledge of medicine and ſurgery, and are fitted for the difficult taſk of a teacher. In general, they have been formerly pupils in the inſtitution, and are already acquainted with its organization. They riſe, according to their ſeniority, to be ſtaff-ſurgeons, and afterwards to be upper ſtaff-ſurgeons. After this, they are promoted, according to a rotation eſtabliſhed with the Royal penſioned ſurgeons, to the ſituation of regimental ſurgeon. Before a new appointed upper ſtaff-ſurgeon can be called upon as a regimental-ſurgeon, at leaſt twelve or fourteen years will elapſe; ſo that the education of the pupils cannot ſuffer through the change of the ſuperintendant. Before the upper ſurgeons can be appointed ſtaff-ſurgeons, they muſt ſubject themſelves to the uſual examinations before the Royal College of Phyſicians and Surgeons.

The pupils of this Inſtitution, whoſe number is at preſent limited to eighty-one, are choſen by the director. They muſt be natives of the Pruſſian dominions, poſſeſs ſufficient abilities, have received a good preliminary ſchool education, bring teſtimonials of their good behaviour, enjoy good health, and have a ſtout well formed body. They are deſtined, in the firſt place, to ſerve as ſurgeons to companies of infantry, or ſquadrons of cavalry; and, in the event of war, thoſe who are fartheſt advanced are appointed to the field-hoſpitals. Afterwards, they are promoted according to their ſeveral qualifications, either to be upper ſurgeons in the Inſtitution, or to be ſurgeons in the Guards, and afterwards to be regimental ſurgeons. Others become battalion-ſurgeons, or are appointed diſtrict-ſurgeons, or chooſe for themſelves ſome civil eſtabliſhment. But, before they are received into the Academy, they muſt all engage, in return for the advantages they may receive from it, to ſerve at leaſt eight years as company or ſquadron-ſurgeons in the Pruſſian army. Every half year, on the 1ſt May and 1ſt of November, nine pupils are ſent to the army, as company or ſquadron-ſurgeons; ſo that each of them remains four years and a half in the Academy. During this time, they receive an allowance of ſix dollars a month, with free lodging and fire-wood, and alſo *gratis* inſtruction in the languages, the acceſſory branches of education, and in every thing connected with the ſciences of Medicine and Surgery. Theſe ſtudies are proſecuted in proper order, according to a fixed plan, which obliges them to attend each courſe of lectures twice, and ſome of them oftener if neceſſary.

They receive inſtruction in the languages and acceſſory branches of education, from maſters appointed by the director, and paid out of the funds of the Academy. The languages taught are the German, French, Latin and Poliſh; and the acceſſory branches conſiſt of pure and practical mathematics, logic, moral philoſophy, hiſtory, and geography; in all of which they undergo examinations twice a week by the teachers.

They receive inſtruction in the theoretical department of Medicine and Surgery, from the profeſſors of the Medical and Surgical College, who receive a ſalary, granted by the King, out of the funds of the Academy. This inſtruction conſiſts of all thoſe branches of knowledge which are requiſite for the formation of a phyſician and ſurgeon, viz. Anatomy, Phyſics, Chemiſtry, Botany, Special Therapeutics, Midwifery, Operative Surgery, Clinical and Juridical Medicine. The proper method of proſecuting theſe ſtudies is pointed out, and the induſtry of the pupils ſecured by the ſuperintendance of the ſtaff and upper ſurgeons. They are attended in each claſs by an upper ſurgeon, who takes care that good order is preſerved, and who repeats to them at home the inſtructions they received in the lecture. Beſides this, during ſome hours ſet apart every week for the purpoſe, they are exerciſed in writing and diſcourſing on ſubjects of Medicine and Surgery; alternately in the German, Latin, French, and Poliſh languages.

They receive their practical information at the beds of the ſick in the Charité, from the profeſſor of Clinical Medicine.

After they have been educated in this manner four years, for half a year before they leave the Academy, they muſt perform the duty of hoſpital-ſurgeons in the Charité, where they change the wards with each other, ſo that they have the care of all kinds of diſeaſes under the ſuperintendance of the ſurgeon of the hoſpital. They are allowed the neceſſary books and text-books for their ſtudies from the library of the Academy; but thoſe who are at all able to do it, muſt alſo purchaſe them for their own uſe. They muſt alſo buy thoſe inſtruments which they carry away with them; but thoſe which they uſe in diſſection are furniſhed by the Academy.

For the better maintenance of order, the pupils dine together at one table, for which a reaſonable ſtoppage is made out of their monthly allowance. The remainder is put under the adminiſtration of the ſtaff and upper ſurgeons, who entruſt it more or leſs freely to each of the pupils, according to their diſpoſition to extravagance or parſimony, in order to accuſtom them early to that economical management, which in future they will find ſo neceſſary with the ſmall allowance they have to expect.

All the pupils, and alſo the volunteers, wear a military uniform, which they muſt provide, as well as the reſt of their clothes.

The ſame capability and other requiſites of the Royal pupils muſt be poſſeſſed by the volunteers admitted. In this capacity only can any foreigners, and not many of them, be permitted to partake of the advantages of the inſtitution. The volunteers, in regard to their ſtudies, and their ſubjection to ſuperintendance, are upon exactly the ſame footing with the other pupils. But they muſt not only provide for their ſubſiſtence, and fee the medical and ſurgical profeſſors whoſe lectures they attend, but alſo muſt pay every month to the Academy a ſmall ſum as a premium for their education. On the contrary, when their term is out, they do not lye under the ſame obligations with the Royal pupils, but may diſpoſe of themſelves as they think proper; and, if they wiſh it, they may be appointed to the Army, when they will enjoy the ſame advantages with the other pupils.

Company-ſurgeons, who formerly uſed to come to Berlin to improve themſelves in medical and ſurgical knowledge, and were entirely left to themſelves, without any advice or ſuperintendance, are now attached to the Academy, in which they receive free lodging and fire, enjoy gratis inſtruction in the languages and acceſſory ſciences, and may be preſent at the repetition of the lectures by the upper ſurgeons. But they muſt fee the profeſſors out of their own pockets, in which they are ſometimes aſſiſted by their regiments. While they continue attached to the Inſtitution, they receive their ſupport from the regiment. They muſt remain at leaſt a year in the Academy, and a longer ſtay is readily granted to them.

In order to ſuperintend and conduct properly this whole aſſemblage of pupils, they muſt all live together in the building appointed for that purpoſe by the King, under the immediate inſpection of the directors and governors placed over them. With the ſame view they are divided into four diviſions, over each of which a ſtaff-ſurgeon preſides.

The firſt diviſion conſiſts of the attached company-ſurgeons. The ſtaff-ſurgeon of this diviſion is aſſiſted by an upper ſurgeon.

To the ſecond diviſion belong the nine pupils in the Charité, with the volunteers there, under the inſpection of a ſtaff-ſurgeon.

The third and fourth diviſions contain the reſt of the pupils and volunteers. Each of theſe is again divided into four ſections, and over each ſection an upper ſurgeon is appointed.

The inſtitution has a library, from which the pupils are allowed books, a ſmall collection of anatomical preparations for the demonſtrations given in it, and a collection of medicines and medical plants for the repetition of the lectures on Materia Medica and Botany. For the purchaſe of books, and improving the other collections, an yearly ſum is allotted out of the funds of the Inſtitution, and ſome time muſt elapſe before they can be very conſiderable.

A treaſurer is appointed to the cheſt of the Inſtitution. He muſt always be a man accuſtomed to the routine of buſineſs, and at the ſame time, in the quality of aſſeſſor, muſt conduct the extenſive correſpondence of the Inſtitution, in which he will be aſſiſted by an upper ſurgeon and two pupils. By which means, the pupils in rotation will be inſtructed in conducting buſineſs.

This very valuable paper we have tranſlated from the Surgical Journal publiſhed by Profeſſor Loder of Jena. He has ſubjoined to it an Appendix, confirming the utility of the plan from his perſonal examination of the pupils, and containing ſome remarks on ſurgical education, which are only applicable to Germany.

We have tranſlated literally the German denomination for the different ranks of the medical officers, chooſing rather to make uſe of exotic phraſes, than to run any riſk of falſe ſtatement. As far as we are acquainted with the organization of the Pruſſian army, their companies and ſquadrons are much more numerous than ours. To each of theſe a ſurgical attendant is attached, correſponding nearly to our ſurgeons' mates. Their battalions alſo conſiſt of more companies than ours, and the battalion-ſurgeon is equivalent to our regimental-ſurgeon, while the Pruſſian regimental-ſurgeon is an officer of great authority, as the regiment is equal in numbers to a Britiſh brigade, and he ſeems to rank above all the hoſpital ſtaff.

It may be alſo neceſſary to explain what is meant by diſtrict-ſurgeon. Pruſſia, and indeed moſt of the ſtates of Germany, are divided into diſtricts, over each of which a medical ſuperintendant, commonly a phyſician, is appointed. He receives a ſalary from government, and is under the controul of the Medical College or Faculty. His duties are, to give advice and counſel regarding every thing which may promote or injure the general ſtate of health; to point out hurtful abuſes; to examine ſurgeons, apothecaries and midwives, reſpecting their qualifications to practiſe; to ſee that they perform their duty; to get them puniſhed for groſs miſdemeanours; to conduct the medical examinations and diſſections in all caſes likely to be inveſtigated in courts of law; to draw up reports of the reſults of theſe in an impartial and ſcientific manner; to attend the ſick poor within his diſtrict; to give immediate aſſiſtance in caſes of accidents or ſudden illneſs; to direct the means employed for reſtoring ſuſpended animation; and to report from time to time to the College or Faculty of Medicine every circumſtance which is connected with the ſtate of medicine within his diſtrict, or bears immediate relation to the duties of his office.

In preſenting to our readers this account of an inſtitution, which has had the beſt effects on the ſtate of Military Surgery in Pruſſia, we truſt that it will not be confounded with thoſe plans for the reformation of the medical department of our army, which owe their origin to diſappointed ambition, or to ſelf-conceit courting notoriety. As the ſyſtem followed by a nation which conſiders every thing connected with its army as an object of the greateſt importance, and whoſe arrangements in the other departments of military ſervice have been generally approved, it is entitled to the moſt ſerious attention. We do not, however, pretend to aſſert that ſuch an inſtitution would be adviſeable, or even practicable in this country. The ſituation of the medical officers in Pruſſia and in Britain, is ſo diſſimilar, that many modifications at leaſt would be neceſſary. Conſidering it, however, as a matter of ſpeculation, it does not ſeem liable to any very weighty objection. It might be placed in London, Edinburgh, or Dublin, or any other medical ſchool of celebrity. Its ſuperintendants might be choſen from among thoſe medical officers who have moſt diſtinguiſhed themſelves in actual ſervice in Egypt, Holland, or the Indies. The additional expence to the nation need not be very great. At all events, it would be trifling, in proportion to the immenſe benefits which might reſult from an inſtitution of this nature properly organized, and would conſiſt principally in beſtowing permanent full pay on men who have deſerved it by the ſervices they have rendered to their country.

An Account of the Inſtitution for the Cure and Prevention of Contagious Fever in the Metropolis. By Thomas Bateman, M.D. F. L. S. Phyſician to the Inſtitution, and to the Public Diſpenſary, Carey-Street.

THE public is already in poſſeſſion of very ample evidence of the advantages which reſult from inſtitutions of this nature in large and crowded towns. The experience of the diſtinguiſhed phyſicians of Cheſter, Mancheſter, and Liverpool, confirmed by the ſubſequent eſtabliſhments at Cork, Dublin, &c. has placed the matter beyond the poſſibility of a doubt. The principal fact aſcertained, or rather decided by theſe inſtitutions, viz. *the facility and certainty by which the propagation of contagion may be prevented, by the ſimple means of ventilation and cleanlineſs*, cannot perhaps be corroborated by too great a variety of teſtimony, nor repeated too often, until it ſhall be familiar, not only to the moſt unlearned of the profeſſion, but well known by the community at large. For the general knowledge of this fact would contribute materially to aid the utility of medicine, which the ignorance and prejudices of the public on theſe ſubjects too often oppoſe and counteract. It would tend to diſarm contagion of its malignancy, which may be almoſt ſaid to be adventitious, ſince it originates in the concentration and confinement of the effluvia. And, above all, during the prevalence of epidemics, it would lead to the moſt effectual means of arreſting their progreſs, and of rendering comparatively mild and harmleſs thoſe diſeaſes which ignorance converts into a ſcourge.

The extent of the prejudices of the public, ariſing from exaggerated notions of the power and malignancy of contagion, has been evident in the active oppoſition that has been made in moſt inſtances to the eſtabliſhment of fever-wards; and the extent of the error in maintaining theſe notions, has been equally demonſtrated wherever the completion of the eſtabliſhment has been effected; for the facts which Dr Haygarth long ago promulgated, have been corroborated by every ſubſequent experiment. Even in thoſe apartments where contagion is concentrated, it has been ſhewn, that the infectious air may be breathed for a ſhort time with impunity; the deleterious *doſe*, as in the caſe of other poiſons, varying in different habits and different ſtates of the conſtitution. But it has been farther proved, that in well-ventilated rooms the contagion is rendered inert, by dilution with freſh air, its influence being limited to the diſtance of leſs than a yard from the body of the patient, and nearly annihilated even in this immediate vicinity; that communication of the contagion may, therefore, be always avoided; and eſpecially that it never takes place, through the medium of the air, to neighbouring or adjoining houſes, and was never known to be effected by means of the clothes, &c. of viſitors.

The writings of Dr Haygarth, Dr Ferriar, Dr Currie, and Dr Clarke, and the reports of ſeveral of the provincial Inſtitutions, contain full and ſatisfactory evidence of the truth of theſe facts; and the eſtabliſhment, of which I ſhall give a brief account, will contribute, to the utmoſt extent of the experience which it has afforded, to corroborate that evidence.

In the winter of 1800-1801, contagious fever being very prevalent in London, the firſt attempt to form an eſtabliſhment for its ſuppreſſion was then made by the Society for Bettering the Condition of the Poor, aided by the exertions of Dr Murray. A private dwelling-houſe, not inſulated, but in the midſt of a row in Gray's Inn Lane road, was fitted up as an hoſpital, and, in February 1802, opened for the reception of patients in fever, under the ſuperintendance of that intelligent and benevolent phyſician. It conſiſts of eight rooms; the two on the ground-floor being ſet apart for the matron and the apothecary's elaboratory; and the ſix, which conſtitute the three upper ſtories, containing each three beds, adapted for the uſe of the patients. This ſmall houſe, including accommodations for only eighteen patients, was of courſe not intended to complete the ſcheme of the Inſtitution. As the funds of the Charity increaſed, other houſes were to be opened in other diſtricts of the metropolis; but, during the laſt two years, in conſequence of the great and unuſual diminution of the prevalence of typhus, the public attention and the exertions of individuals have been little excited, and an extenſion of the plan has ſcarcely been required; for the houſe has been capable of accommodating three times the number of patients that have lately come under its notice; and the majority of the ſmall number it has received has been brought from diſtant quarters of the town, from Moorfields, Spitalfields, Tower-Street, and even from the Borough.

The principal objects of an inſtitution of this kind are, it is obvious, an early removal of the patients to the Houſe of Recovery, not delayed by formalities of recommendation, or diſtant periods of admiſſion, and a careful purification of the clothes, furniture and apartments, which may have been previouſly infected. The following are ſome of the regulations of the Inſtitution, for the accompliſhment of theſe views.

‘ All poor perſons labouring under infectious fever, and reſiding within limits hereafter to be aſſigned, ſhall be conſidered as proper objects of this Charity.

‘ Upon the recommendation of any one for relief by this Charity, notice ſhall be given to the phyſician, and the patient may be admitted into the houſe by an order for that purpoſe ſigned by the phyſician.

‘ A chair provided with a moveable lining, or ſome other means of conveyance, ſhall be kept at the houſe, in which all perſons ordered by the phyſician to be removed, ſhall be carried thither at the expence of the Inſtitution.

‘ When the fever ſhall have ceaſed in a dwelling-houſe, meaſures ſhall be adopted for the purpoſe of checking the progreſs of contagion, or preventing the renewal of its effects. The apartments ſhall be cleanſed and white-waſhed, and infected bed-clothes and apparel ſhall be purified or deſtroyed.

‘ A ſtock of bed-clothes and apparel ſhall be provided, to conſiſt of ſuch articles as the committee may direct, from which the objects of this Charity ſhall be ſupplied when it may be neceſſary.’

Two Directors are appointed monthly by the Committee, and a permanent Inſpector, under their direction, to ſuperintend the proper application of the clothes, &c. and the purification of infected apartments.

The internal regulations of the Houſe are nearly the ſame as thoſe recommended by Dr Haygarth and Dr Ferriar in their reſpective inſtitutions. They chiefly direct the change of the infectious clothes and linen of every patient, on admiſſion, for clean linen, and the waſhing of the face, neck, and extremities, in lukewarm water.

The effect which this ſalutary change has upon the patient, before any medicine is given, is often more beneficial than thoſe which all the febrifuge drugs in the world could beſtow. The floors of the wards are alſo directed to be waſhed at leaſt twice a week, and the walls to be white-waſhed at leaſt every three months; all diſcharges to be ſpeedily removed; and the clothes which the patients bring with them to be carefully purified, and reſtored to them on their diſmiſſal, free from any remains of contagion. They rejoin their families, therefore, without the hazard of communicating infection.

The beneficial effects of the Inſtitution, eſpecially in the diſtrict viſited from the Carey-Street Diſpenſary, have been extremely apparent. In ſeveral courts and alleys, where, previous to its eſtabliſhment, contagion was perpetually lurking, and where, in conſequence, the ſame individuals were frequently attacked with fever again and again, the diſeaſe has altogether ceaſed to appear ſince the purification effected by the Inſtitution. Within this diſtrict, only fifteen caſes of typhus have come under our notice during the laſt eight months.

In many families, too, the efficacy of the meaſures adopted by the Inſtitution has been moſt obvious. Although ſeveral perſons have been attacked, and often fatally, previous to any application for relief; in every inſtance, from the time of the employment of theſe meaſures, the progreſs of the contagion has been ſtopped. To this fact I have not heard of a ſingle exception.

It has been ſtated that the houſe is ſituated in a row; and the inhabitants of the adjoining houſes, under the influence of common prejudices, were at firſt, as might be expected, very adverſe to the Inſtitution. But after an experience of nearly two years, reſiding in actual contact with the Houſe of Recovery with perfect impunity, their alarm has altogether ceaſed; no fever having, during the whole time, occurred in the neighbourhood, or been known to be communicated in any way from the Houſe.

Since the opening of the Houſe on the 9th of February 1802, 389 patients have been admitted. Of theſe, 349 have been diſcharged cured, 35 have died, and 5 are at preſent in the Houſe, (November 26th, 1804.) Only 26, however, can be ſaid to have died of fever. One died ſuddenly during convaleſcence; another in conſequence of the recurrence of an old *tympanites*, ſome time after the diſappearance of fever; a third of an organic affection of the heart, as appeared on diſſection, &c. The proportion of deaths would probably be conſiderably leſs, could the patients be received in the early periods of the diſeaſe. It may be remarked, that of 50 patients admittted in the courſe of the preſent ſummer, only *one* applied to the Charity before the fifth day of the fever, and above one-third after the ninth day. In no inſtance has the fever proved fatal, where the patient was admitted before the ſixth day of the diſeaſe.

I have little to add with reſpect to the practice which has been employed in the Houſe, as no peculiar remedies have been reſorted to. The external uſe of cold water has been liberally employed both by my predeceſſor Dr Dimſdale, and myſelf, in all caſes where, according to the accurate and philoſophical concluſions of Dr Currie, it appeared requiſite or admiſſible. The reſult of Dr Dimſdale's practice has already appeared in the ſecond volume of Dr Currie's 'Reports,' (third edition); and it coincides perfectly with the copious evidence which that enlightened phyſician has adduced. But, after a view of the abundant experience upon which the recommendation of this great and invaluable remedy in fever now reſts, it would appear preſumptuous to attempt to give any bias to the evidence, from the partial experience which this Houſe has afforded. I have had an opportunity, in one caſe only, of employing the cold affuſion before the third day; and therefore the remedy, with that exception, has been applied too late to *cut ſhort* the fever. It has invariably, however, appeared to give relief to ſome of the uneaſy ſenſations which accompany fever, and which conſtitute a great additional irritation; it has almoſt invariably been ſucceeded by a calm and refreſhing ſleep, and generally by a gentle perſpiration; * the courſe of the fever has alſo, in general, ſeemed to be milder, than from the violence of the firſt ſymptoms might have been expected. The practice has appeared to be attended with the leaſt advantage, in thoſe caſes where there was great cuticular conſtriction (if I may be allowed the uſe of that expreſſion), ſhewn by a dry and parched ſkin, without any tendency to perſpiration, and accompanied with an uneaſy ſenſation of heat, but where in reality the thermometer indicated ſcarcely any increaſe above the healthy temperature, not riſing above 98½ or 99°. In a few caſes of this kind, I have employed the cold bath twice a day for ſeveral days, with a temporary but very tranſient benefit. Where the temperature of the body was high, and the ſkin yielded a pungent ſenſation of heat to the hand, the application of cold water was, with one exception, invariably followed by a diminution of the febrile heat by one, two, or three degrees of the thermometer, by a diminution of the velocity of the pulſe, and other not leſs ſalutary changes, which, though not effectual in removing the fever, contributed certainly to the relief, and probably to the ſafety of the patient.

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* It ſhould be obſerved, that the mode of uſing the cold affuſion in the Houſe is by means of a *ſhower-bath*, which is more commodious, leſs alarming to the patient, and perhaps equally efficacious with the affuſion by means of a bucket.

In ſome caſes, where there exiſted particular urgent ſymptoms, or determinations to particular organs, I was at firſt in doubt as to the propriety of employing the cold bath, although indicated by the ſteady increaſe of heat. In all theſe caſes, however, I ventured on the uſe of it, from a conviction of the importance of alleviating the great general irritation which accompanies that ſtate of temperature, and of the inefficiency of all other remedies to produce that relief in an equal degree. The reſult was favourable. In no caſe were theſe determinations to the lungs, head, throat, or bowels, increaſed by the cold bath. Various catarrhal ſymptoms, a ſevere cynanche tonſillaris, profuſe diſcharge of the catamenia, and even a ſevere diarrhœa, with great hæmorrhagy from the inteſtines, were not increaſed by its uſe. On the contrary, all the former caſes appeared to be relieved by it; and in the laſt inſtance alone, which is the exception above alluded to, the ſymptoms were not alleviated, nor was the febrile heat diminiſhed, nor any other advantage procured by it. This concluſion, however, may be deduced,—that, where the heat is ſteadily above the natural temperature, even in a very ſlight degree, without perſpiration or a ſenſe of chillineſs, the practice is ſafe, even with the exiſtence of the moſt untoward ſymptoms. From this limited experience, we ſhould ſcarcely have been warranted in theſe general inferences. But, after theſe facts had come under my own obſervation, I was gratified to find, by the ſecond volume of Dr Currie's Reports, that they accorded preciſely with his enlarged knowledge of the ſubject.

It is earneſtly to be hoped, that this important practice, no longer a matter of experiment, and perhaps the only remedy to which the term *febrifuge* can with ſtrict propriety be applied, will be generally adopted. It ſhould be recommended with confidence, not as a bold expedient, for that implies danger, or at leaſt uncertainty, but as a known remedy, univerſally ſafe, and of the operation of which a more rational and philoſophical explanation can be given, than of any other remedy perhaps within the ſphere of medicine.

Featherſtone-Buildings, Nov. 26. 1804.

An Account of the Diſeaſes which have been treated at the Public Diſpenſary, Carey-Street, from September 1. to November 30. incluſive.

ACUTE DISEASES.

	No. of Caſes.		*No. of Caſes.*
Typhus	6	Variola	2
Synochus	13	Rubeola	3
Tertiana	2	Rheumatiſmus Acutus	2
Quotidiana	1	Cholera	8
Scarlatina	5	Abortus	2
Pneumonia	9	Pertuſſis	3
Catarrhus	40		

CHRONIC DISEASES.

	No. of Caſes.		*No. of Caſes.*
Chronic Hydrocephalus	1	Hemiplegia	4
Cephalea	12	Paraplegia	2
Hæmoptyſis & Phthiſis	36	Epilepſia	1
Chronic Catarrh & Dyſpnæa	32	Rheumatiſmus Chronicus	34
Dyſpepſia	42	Lumbago	5
Diarrhœa	31	Melancholia	2
Dyſenteria	16	Aſthenia	30
Colica	2	Hydrops	12
Colica Pictonum	6	Impetigo	7
Menorrhagia	4	Pſoriaſis	3
Amenorrhœa	11	Lichen	2
Hyſteria	4	Prurigo	3
Leucorrhœa	4	Porrigo	2
Dyſuria	6		

During the three months comprehended by the preceding liſt, the metropolis has been, on the whole, very free from diſeaſe; and the applications to this Diſpenſary have been fewer than for a conſiderable time paſt within the ſame period. In the month of September, the weather was uniformly hot; and, on ſeveral days in the third week, the thermometer in the ſhade was as high as 77° or 78°, even about ſunſet. In October and November the temperature was variable, the viciſſitudes were great, and there were frequent and heavy rains.

Until the middle of October, the uſual complaints of the alimentary canal were prevalent to a conſiderable degree. The moſt predominant form was diarrhœa, which yielded in general to anodynes and diluents, and in ſome caſes was relieved by laxatives. In October they more generally aſſumed the dyſenteric type, and, in ſeveral inſtances, were attended with ſevere hæmorrhagy;

that the diſeaſe it produced had no antivariolous powers. (See Annals of Medicine, Vol. VIII. p. 301.)

According to the report, however, of a very intelligent medical committee, caſes have actually occurred of ſmall-pox after perfect vaccination. But as theſe bear no proportion to the immenſe number of inſtances in which vaccination has proved unqueſtionably preventive of ſmall-pox, they do not militate in the ſmalleſt degree againſt the propriety of the practice, but, on the contrary, by corroborating the analogy between vaccina and ſmall-pox, which alſo, in ſome particular conſtitutions, does not ſecure the patient from having the diſeaſe a ſecond time, it in reality ought to increaſe our confidence in its antivariolous powers. As the two beſt authenticated caſes, in which vaccina did not prevent ſmall-pox, were ſiſters, it would appear that it depends on ſome hereditary idioſyncraſy. Would it be poſſible to aſcertain that the ſame individuals, or other individuals of the ſame family, were liable to have ſmall-pox oftener than once? If the preventive power of vaccina or ſmall-pox is not abſolute, in what manner is it limited? Does it, according to Mr Goldſon's idea, ceaſe after a certain period? Does it modify in any way the ſymptoms of ſmall-pox, when it is unable to prevent the recurrence of the diſeaſe? Does it become abſolute after a ſecond or third recurrence? Is there any plauſible hypotheſis to account for the fact, that ſome diſeaſes do not attack the ſame individual oftener than once? Many other intereſting queſtions naturally occur on this ſubject; and we look forward with expectation to the next Report of the Vaccine-pock Inſtitution, which has ſo laudably undertaken the arduous taſk of inveſtigating the laws, and to whom the hiſtory of this curious diſeaſe is ſo much indebted.

Extract from a Letter from a Correſpondent in London. On Pulmonary Tubercles.

Although it would be eaſy to prove that not a ſmaller proportion than one fifth of the whole deaths in the Britiſh iſlands is occaſioned by tubercles, and their conſequences *vomicæ*, yet but a ſmall part of their hiſtory has been inveſtigated. Beſides, theſe tubercles, as I have uniformly found, being the local diſeaſe which occaſions or accompanies what are univerſally conſidered to be pulmonary conſumptions, they are alſo, in ninety-nine caſes out of the hundred, the local diſeaſe in the coughs which commonly recur at the beginning of winter for ſeveral years before death.

But

poſſible advantage to the ſtate and to mankind. They ſaw with regret the practice get into the hands of well-meaning perſons, who did not poſſeſs the neceſſary knowledge of the diſeaſe; and they witneſſed, with indignation, the careleſs manner in which it was practiſed by ſome profeſſional men, regardleſs of their character, and of their duty. In proportion as the diſeaſe was ſlight did they relax their attention, and often neglected to ſee that the diſeaſe had actually been produced, truſting to the report of mothers and nurſes. The parents of children, who were vaccinated at public inſtitutions, were alſo very frequently ſo ungrateful for the benefit conferred upon them, that they took it upon themſelves to decide on the ſucceſs of the vaccination, and did not return at the appointed time to ſhew its effects. Many, in this way, are erroneouſly ſuppoſed to be ſecured againſt the Small-Pox, who in reality never had the Cow-Pock. The occurrence of variola in ſuch caſes, although it can have no weight in the opinion of the profeſſion, cannot fail to render vaccination leſs popular.

But even the uncertainty of the characteriſtic marks which determine its preventive efficacy, is ſo great, that the moſt experienced are unable to decide; and when the doubt is once entertained, the failure of ſubſequent inoculations cannot completely remove it. How far the teſt of double vaccination, propoſed by Mr Bryce, can be always confided in, deſerves to be accurately inveſtigated; and if it ſhall be found correct in all caſes, it becomes the duty of every practitioner, even in the greateſt practice, to employ it, however inconvenient it might be. But the inconvenience which has been urged as an objection is next to nothing, as it conſiſts in reinoculating the patient on the fifth or ſixth day, with matter taken from his own arm.

But if experienced vaccinators find it ſometimes difficult to pronounce decidedly on the character of the diſeaſe, thoſe who commence the practice, without ever having ſeen it, muſt be ſtill more liable to err. If, unfortunately, they produce at firſt a ſpurious diſeaſe, they go on inoculating, without ſecuring any of their patients againſt the variolous contagion. From this ſource of error, the greateſt number of Mr Goldſon's caſes of ſmall-pox after vaccination appear to have proceeded; for he himſelf tells us that Mr Rickman found that the matter ran rapidly into a purulent ſtate after the eighth day, (Goldſon, p. 49.) No experienced vaccinator would have taken matter from ſuch a ſource; and Mr Goldſon's aſſertion, that the arm ſhewed a fine ſpecimen, ſtrongly characteriſtic of the diſeaſe, amounts to nothing. Dr De Carro and his friends alſo thought that Count Mottet's arm exhibited ſo fine a ſpecimen, that they preferred matter from it to leſs recent matter which they had; but they ſoon diſcovered perature not being produced as in the preceding winter, the diſorder returned, and in three months proved fatal.

The only effectual means of ſtopping the progreſs of conſumption are pregnancy and a warm atmoſphere.

Tubercles ſeldom prove fatal in pulmonary conſumption until many of them become vomicæ; but in other diſeaſes, after death, the lungs are often found full of tubercles without any vomicæ. In one caſe of Empyema taking place in pulmonary conſumption, the pleura coſtalis and muſcles were ſuppurated on the right ſide, ſo that many pints of pus were diſcharged by a puncture for ſix months, during which time air iſſued in great quantities from the aperture. For four months all the ſymptoms diminiſhed, ſo as to afford great hopes of a recovery; but at laſt the breathing became difficult and very ſhort, the pulſe grew quick, the nights were ſleepleſs, the ſtrength failed, hectic fever appeared, and the patient died. After death, one of the ribs over which the pus had flowed for ſix months, was eroded, or was become carious. The right lung was not, as we expected, contracted, but was indurated and full of tubercles, and the cellular membrane was extenſively condenſed. The cavity of the thorax on the diſeaſed ſide was not diſeaſed, and the lungs adhered in no part to the pleura coſtalis. The left lung was in a healthy ſtate.

I ſee no connexion between ſcrophula and tubercles, to juſtify the opinion that conſumption belongs to that diſeaſe. It does not ſeem probable that conſumptions are infectious in this climate; and it remains to be ſhewn what is the nature of the diſorders called conſumptions, which are ſo infectious in other climates, as in Italy and Greece.

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PART I.

ORIGINAL COMMUNICATIONS.

I.

Case of Malconformation of the Urinary and Genital Organs in a Female. By Mr Astley Cooper, Surgeon to Guy's Hospital, London.

Ann Carter, aged 22, was admitted, on the 4th of March 1803, into St Thomas's hospital under the care of Mr Cline, on account of a fungous tumour on the lower part of the abdomen, through which the urine was involuntarily discharged. This misfortune she had laboured under from her birth; but when she arrived at the age of puberty, her situation, in that part of the country in which she was born, became insupportable to her feelings, on account of her infirmity being known. She therefore resolved to seek her subsistence in London, where she vainly imagined it might escape detection; and she soon procured the situation of a servant to a family in town. But being unable to retain her urine, her clothes were rendered offensive by it, and her bed was nightly wetted. Her infirmity was thus soon discovered by her employers, and she was dismissed from their service. By frequent disappointments of this kind, she was reduced to seek a miserable subsistence by begging, and spent days and nights in the streets of London, until, becoming ill from the effects of want, and exposure to the severity of the weather, she was carried by the police to an hospital; and, when admitted into St Thomas's, she was so much reduced by poverty and sickness, that she died on the 8th of March, four days after her admission.

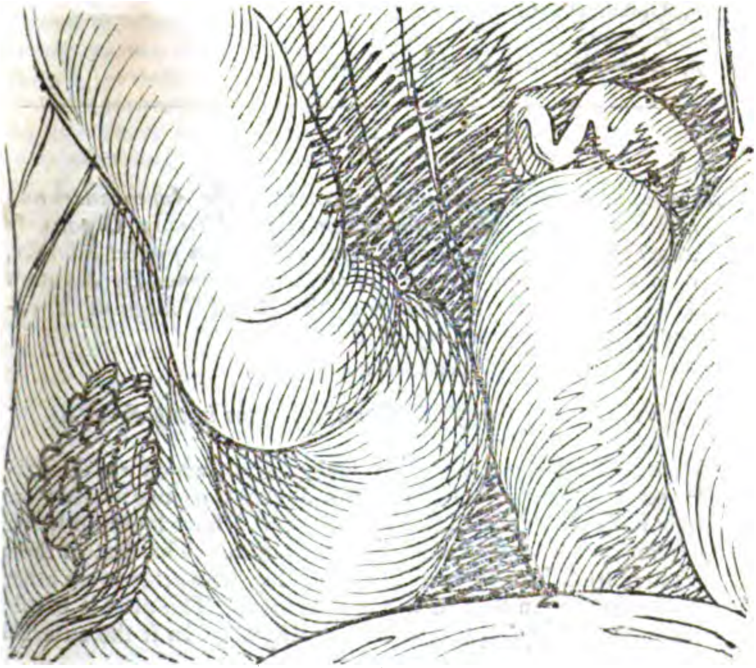
Upon examination of the fungus, when she was alive, it was found to occupy the region of the pubes, and to extend from thence to the usual situation of the symphysis. It was red in colour, spongy in texture, very vascular in appearance; bled upon the slightest irritation, and was very sensible when touched. It formed three projections; a large one in the middle, with a much smaller one on each side. The urine frequently trickled from the lower part of the tumour; and if any thing was given her to drink, in a few minutes it began to flow *guttatim;* but if she made any considerable effort with the abdominal muscles, a small stream of urine spouted from each side of the surface of the tumour. The openings through which it was discharged were sufficiently large to admit the introduction of a small probe, and were situated one on each side of the tumour, near to its junction with the skin, and towards its lower edge. Just above the tumour a cicatrix was observed, which was the only appearance of umbilicus; so that the umbilical vessels had passed through the parietes of the abdomen near the fungus, instead of at the usual place.

When examined after death, the external labia pudendi were found to recede from each other more than usual, and discovered the total want of the nymphæ and meatus urinarius, as the lower part of the fungus extended downwards so as to occupy the usual situation of the glans clitoridis and meatus. The vagina maintained its usual situation, but was destitute of any appearance of hymen, and had no extension of perinæum over its orifice. It was of the common size of the virgin vagina.

Upon dissection, it was discovered that the bones of the pubes, at their symphysis, were separated from each other to the distance of an inch and a half, or two inches, and that the abdominal muscles immediately above the usual situation of the symphysis were wanting; so that the bladder was devoid of any covering from these. On opening the abdomen, and looking into the cavity of the pelvis, the urinary bladder was seen forced through the aperture of the skin and abdominal muscles, but with its anterior portion wanting; so that the fungous surface upon the anterior part of the abdomen was the posterior part of the bladder with the ureters terminating in it. From within, it appeared puckered at its edges, and adhered firmly to the margin of the abdominal muscles and skin. The ureters which opened through the lower part of the fungus were uncommonly large, and had served the purpose of reservoirs. The kidneys were also more than double their usual size, owing entirely to their pelves and infundibula being enlarged; for the secreting part did not appear altered. The corpora cavernosa of the clitoris were attached, in the usual manner, to the bones of the pelvis. Their muscles, though small, were distinctly formed, as were also the *plexus retiformes.* The corpora cavernosa did not pass on either side in a straight line towards the glans, but in a semicircular direction; and, on tracing them towards the upper part of the vagina, I found them terminating on each side in a glans situated in the middle of the labium, and covered with a portion of skin resembling the prepuce. The glans of one side was about two inches distant from the glans on the other. The uterus and its appendages were unaltered; the other viscera of the abdomen were in a sound state; and the rectum terminated in its usual manner in the anus.

The explanation of these appearances is simple. The lusus consists in a deficiency of the skin and abdominal muscles anterior of the urinary bladder; in the want of the anterior half of the bladder; and in the projection of the posterior part through the opening in the abdominal muscles, where it forms a tumour, upon the surface of which the ureters open.

Sketch of a portion of the Rectum and Right Ureter, of their actual size, to show the very extraordinary enlargement of the latter, and the immense disproportion between them.



Explanation of the External View. Plate I. page 42.

a a, The spines of the ossa ilii.
b, Excoriation above the fungus.
c, Umbilical cicatrix, showing where the umbilical vessels passed, above the fungus, and close to it.
d d, Projections of the fungus.
e e, External orifices of the ureters.
f, Vagina.
g, Anus.

Explanation of the Appearances on Dissection. Plate II.

a, Gall bladder.
b, Vena cava.
c, Aorta.
d d, Spermatic vessels.
e e, Kidneys.
f f, Ureters.
g, Bladder inverted.
h, Uterus.
i i, Fallopian tubes.
k k, Ovaria.
l l, Umbilical arteries.
m, Umbilicus.
n, Umbilical vein.
o, Rectum.
p, Abdominal muscles turned down.

II.

An attempt towards a Systematic Account of the Appearances connected with that Malconformation of the Urinary Organs, in which the Ureters, instead of terminating in a perfect Bladder, open externally on the Surface of the Abdomen. By ANDREW DUNCAN, jun. M. D. Fellow of the Royal College of Physicians, and Royal Society of Edinburgh.

(Concluded from page 60.)

V. *Description of the Genital Organs in the Female.*

THE malconformation of the urinary organs, which was described in the First Number of this Journal, occurs much more rarely in the female than in the male sex. I have found only five cases on record, anterior to this publication. The first of these is quoted from Van Horne by Bartholinus, who gives us no other information, than that such a case existed. The next is briefly described and slightly delineated by Ruysch. In it the external parts of generation seem to have been perfect, and the vagina was furnished with a semicircular hymen. Of the third example, we have no less than three accounts, and as many engravings, by Mr Bonnet, the surgeon who delivered her of a living child; by Dr Oliver, who saw her after delivery; and by Dr Huxham, to whom the case was communicated. The whole account is so extraordinary, and seems to have been so entirely forgotten, that I shall make no apology for transcribing Mr Bonnet's description of it, with the omission of some strictures on Dr Oliver's inaccuracy.

'As there appears to be some difference, in the accounts of Drs Huxham and Oliver, of the remarkable structure of the pudenda, &c. of the woman of Lanteglass, near Fowye, published in the Philosophical Transactions, No. 379, I take the liberty of giving you a particular account of what I observed with respect to this matter. This I am the rather emboldened to do, as I repeatedly observed the wonderful structure of the parts before the birth approached, and before I was obliged to make the incision.

'This woman was about 23 years old when she was married, and some time after conceived. As she was conscious of the preternatural structure of the parts, and her mother apprehensive of the danger that would attend the delivery under such unhappy circumstances, they applied to me about the seventh month, in order to engage my assistance.

'On viewing the abdomen, I made the following observations.—There was no sign of the umbilicus; but, about three inches lower than that is regularly placed in persons naturally formed, there was a spongy fleshy extuberance, nearly of the shape and bigness of an hen-egg, entirely resembling that luxuriant flesh which is thrown forth in ill-digested wounds, and is therefore commonly called proud flesh. This was exceeding tender, and on it she could not bear the least touch. On the lower part of this excrescence, I perceived two small orifices, the one distant from the other about an inch. Through these the urine drops continually, nor is she able to retain it, but, by violent efforts, can make it spout out near a foot,

'About ¼ inch below this protuberance was a transverse orifice, much resembling the anus of a cock. Through this the menstrua regularly flowed: by this she was impregnated.* It was with some difficulty I thrust my finger into this orifice, in order to reach the os tincæ, which, however, I could by no means feel, it lay so deep; but I plainly felt a thick transverse membrane separating this passage from an orifice, which is situated about two inches below that already described. This lower orifice seemed to be situated exactly where the symphysis of the ossa pubis is in women regularly formed, somewhat above the place where the natural hiatus should have been. I could but just enter the tip of my finger into this. There were a few hairs scattered up and down irregularly about this orifice. The anus terminated as usual with a sphincter, about two inches below this lower orifice, much more forward than usual.

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* Per hoc etiam gravida facta fuit mulier, haud magnam vero tempore coitus percepit voluptatem, summa enim penis glans in hoc orificium vix fuit intromissa, multo minus ipsa virgo. *Huxham,*

'So that the upper orifice, which may be properly called the orifice of the vagina, was about $\frac{3}{4}$ inch below the umbilical excrescence; the lower oblong orifice (or another passage to the womb) was about two inches below that of the vagina.

'This woman had no os, or ossa pubis; indeed, there was an apophysis jutting out from the lower part of each os ilium, but they were far from being joined, as usual, by synchondrosis.

'*July* 18, 1722. I was sent for late at night. I found the woman with true travail-pains upon her. The throes were excessively violent, and the continued agony had almost quite exhausted the poor woman's spirits; but the orifice of the vagina was no way sensibly dilated, though the anus, through the violence of the throes, opened extremely wide. In vain were all endeavours to relieve her, by thrusting up the child, and putting the mother in a proper posture. Vain were her own throes and agonies. Convulsions now had seized her, and nature seemed to have denied a longer life to the mother, or an entrance into it to the child.

'I was in the utmost perplexity what to do under these circumstances. On the one hand, I considered, that if there was not a passage made for the child, and that by incision, both mother and child must speedily perish. On the other hand, I foresaw the danger and hazard of an incision, and the unavoidable censure of having killed the woman, if she should die under the operation. At last humanity so far prevailed with me, as to try a doubtful method of preserving life, rather than none.

'I told her mother, and the other persons in the room, that death was inevitable, without making the passages wider by incision, and so attempting a delivery; withal apprising them of the uncertainty of the event of the operation. When they saw her, as they thought, just expiring, they delivered her into my hands, to do with her what I thought fit.

'I immediately thrust my scalpel into the inferior oblong orifice, and directly cut into the orifice of the vagina, so brought them into one; then, presently, with my scissars, snipped the transverse membrane. This being done, I easily introduced my hand, felt the head of the child, and, with my finger thrust into its mouth, drew forth a female infant, living and well formed, to my own surprise, and admiration of all. Thus was this Gordian knot at last happily cut, that could not be untied.

'Ever since she was delivered, in the manner recited, she hath suffered a prolapsus uteri, upon the least standing or walking. I proposed to remedy this by a suture, as is practised in the case of the vulva breaking into the anus; but she would by no means admit of it; so that she almost continually labours under a procidentia uteri; and the body of the womb and vagina are so corroded by the acrimony of the urine, that there are four or five ulcers formed upon them. Besides this inconvenience, some of the thinner parts of the excrement are discharged at the bottom of this large cleft; and by introducing my finger at the bottom of the cleft, I can easily thrust the top of it through the anus.'

The next case is described in the fifth volume of the Manheim Transactions, by Dr W. Nebel. The girl lived only three months. In her the situation of the umbilicus was not much lower than natural, and there was an interval of half an inch between it and the upper edge of the protruded bladder. The bladder itself was seated rather higher than usual, and was totally unconnected with the external parts of generation, which were extremely simple, consisting merely of a chink in the centre of the lower edge of the abdomen, so small and narrow that it could hardly be seen. Between this and the bladder there were two small tubercles, and on the outside of these, two larger ones, having a considerable resemblance to those delineated in Mr Coates's case. On dissection, the ureters were found larger than usual, and the pelves of the kidneys and tubuli belliniani were greatly increased in size. The emulgent arteries, on the contrary, were very small. The vaginal chink was pervious, and led to an uterus apparently perfectly formed.

The last case of this kind, on record, is described by M. Penchienati: It differs very considerably from all of the others; and the imperfect description both of the external appearances and of the dissection are the more to be regretted, as it might have assisted us in investigating the manner in which this malconformation is produced. There was no umbilicus in the usual situation; but, on examining the external parts of generation, which were moist, swelled, and very much inflamed, a kind of button was found in the natural situation of the clitoris, through which the urine was discharged. M. Penchienati conjectured it to be the umbilicus, with the urachus still pervious. Four years after he examined it, he was informed that the child continued healthy, but that the pudendum was occupied by a tumour the size of a hen's egg, with its base resting on the vagina; and that on its surface there were two apertures, through which the urine was discharged, especially when the child cried, or when the belly or tumour itself was compressed. In about eleven months after this the child died, and he received the following account of the dissection. 'There was observed, in the first place, a tumour of about the size of a turkey's egg, covered with the common integuments, and appearing above and below the bones of the pubes. In the upper edge of the tumour, and a little to the right, there was a mammillary projection surrounded with wrinkles, from which the urine flowed on compressing the belly, at the time when M. Penchienati saw the child; but it was now closed, and the urine flowed from the other aperture, which M. Penchienati supposes to have been an ureter. The bones of the pubes were separated from each other to the distance of three inches, and terminated in a kind of point, to which the recti muscles were attached. These muscles, in order to accommodate themselves to the convexity of the upper part of the tumour, projected forwards at that place in the form of an arch. The external labia were designated by a kind of cutaneous fold at the sides of the tumour; but there was neither clitoris nor nymphæ, although below the tumour there was found the orifice of the vagina, which was continued to the mouth of the womb, as usual.' From this dissection, M. Penchienati concludes, that the tumour was occasioned by a hernia of the bladder, as he had conjectured at first. It is much to be regretted, that so very curious a case should not have fallen under the observation of more intelligent or more zealous anatomists. The tumour differed from all the other cases mentioned, by being covered with the common integuments; and, from the plates and description, it might be conjectured, that it differed still more remarkably in being hollow. But, if this were the case, how could the ureter traverse the cavity of the bladder, so as to open through the integuments? and, if it did so, how could any urine be collected within the bladder, so as to be discharged through the aperture of this same ureter on pressure? Is it not much more probable that this external aperture was not the mouth of an ureter, but an accidental rupture of the parietes of the bladder and integuments, after previous adhesion, in consequence of an accumulation of urine in the bladder, which could not otherwise be emptied? If this was not the case, where was the aperture of the other ureter? In what manner was the urine of the other kidney discharged? An accurate examination of this case would have confirmed or refuted a hypothesis which I have formed of the origin of this malconformation; but the opportunity has been neglected, and is not likely again to present itself.

Since the publication of the first part of this paper, Mr Burns, surgeon in Glasgow, has communicated to me another female case which he has met with. The deviations from the structure of the urinary organs were of the usual appearance. The tumour was about the size of a pullet's egg, of a spongy texture, an irregular surface, and a florid vermilion hue; was covered with a mucous exudation, and had the line of contact between it and the skin accurately defined. It was extremely sensible, and bled on the slightest touch. The parts of generation were more uncommon. From the inferior margin of the protruded bladder, the two labia originated, and run backwards along the rami of the pubes, terminating at length in the perinæum, or rather in what ought to have been the perinæum; for in this subject, strictly speaking, there was no perinæum. The rectum, instead of terminating at the usual place, perforated the posterior wall of the vagina; then, occupying the canal of the vagina, it passed through the vulva, and projected about an inch beyond the labia pudendi, bearing a distant resemblance to an imperfectly formed penis. It was of considerable size, possessed a writhing motion, and freely discharged meconium by an orifice situated in its apex. Mr Burns was not permitted to ascertain whether this intestinal production had any communication with the vagina, nor could he discover any meatus urinarius; and although the child died two days after birth, leave could not be obtained to inspect the body.

From these cases it appears, that although the external parts of generation sometimes deviate very much from their natural structure, the essential and internal parts are very seldom materially deranged. Many of the males seem to have been by no means deficient in sexual appetite, and to have secreted abundance of semen; although, from the structure of their penis, they were totally incapable of procreating the species; whereas, the impregnation and subsequent delivery of the Cornish woman affords us an example of a female, under the most unpromising circumstances, becoming a mother.

We may perhaps account, in part, for this malconformation being more frequently observed in the male than in the female, by supposing that the latter are more anxious, and more successful, in concealing it: still, however, the disproportion is so very great, that I cannot doubt its actually occurring much more frequently in the male. If so, it must depend upon some physical circumstance connected with sex, common to both, and yet different in what will be the probable consequences of such a circumstance occurring in the fœtus, immediately at or soon after its formation. As soon as the urine begins to be secreted, it will accumulate in the bladder, and distend it as well as the ureters and kidneys. In the adult, ischuria proves fatal in a very short time, both from the rigidity of the containing parts preventing them from yielding to the distending pressure, and from the reabsorption of an excrementitious matter, highly deleterious to animal life. In the early fœtus, however, circumstances are extremely different: In it the urine can contain very little, if any, excrementitious matter; and the whole containing parts are soft and plastic, the bones scarcely cartilaginous, and nowhere knit together. The bones of the pubes, therefore, yield to the distending pressure, and are separated gradually from each other, until they become so firm that it has no longer any effect upon them. But by the separation of the bones of the pubes, the recti muscles are also separated, and the bladder is deprived of its natural support on the fore part, while below, behind, and above, it is supported by the bones of the pelvis and spine, and various firm viscera. The whole distending force will therefore act on the anterior portion, which, with the skin, will be protruded forwards, and, becoming thinner, will at last give way, and burst outwardly. The bladder, being no longer capable of containing any urine, will contract, and, by the pressure of the abdominal viscera, will be inverted and protruded through the ruptured aperture. Thus, in addition to an impervious urethra, we shall find the bones of the pubes separated, the ureters opening externally through a ruptured and inverted urinary bladder, and the ureters and kidneys very much enlarged, which are all the essential circumstances of the malconformation. If a solitary case should occur, in which the bones of the pubes were actually united by synchondrosis, we must suppose that the urethra did not become impervious until after the bones had acquired some degree of rigidity; and if, on the other hand, a case should occur in which the bladder still remains hollow, and is not inverted or protruded, while the urine oozes through an aperture in the integuments of the abdomen, it would confirm the hypothesis now advanced, as it would afford an example of the bladder adhering to the integuments, and bursting outwardly, differing only from the common variety, in the size of the rupture being so small, as to allow some urine to remain in the bladder, and prevent it from being inverted. This seems actually to have occurred in Mr Penchienati's case; at least if we may confide in the drawings; for the description, unfortunately, is extremely imperfect.

I am perfectly aware that this hypothesis rests upon several gratuitous and very objectionable suppositions. The only circumstance which entitles it to any attention, is the manner in which it accords with all the essential deviations. The hypothesis of Professor Roose, which supposes the lusus to be the consequence of an external injury, at the same time separating the bones of the pubes, and bursting the bladder, does not at all account for the immense size of the ureters and kidneys. Besides, the rupture of the bladder, and separation of the ossa pubis, would frequently occur separately; and an external injury would be much more likely to force in the bones of the pubes than to separate them symmetrically. Such an effect I can only conceive to arise from an equal and gradual distending power within the pelvis itself; and the enlargement of the ureters can scarcely have been owing to any other cause than the accumulation and retention of urine. But urine could not be accumulated in the ureters, if they had always opened on the surface of the abdomen: It therefore becomes probable that they once terminated in a bladder which had no outlet; and as no other distending power, capable of separating the bones of the pubes, exists within the pelvis, the probability is increased.

But it may be objected, that we sometimes find the urethra impervious, where this malconformation does not exist. This is undoubtedly true; and it would be absurd to argue that the latter is a necessary consequence of the former. On the contrary, the rupture may take place in another situation, as through the rectum or perinæum. Examples of both are recorded as occurring in the human body; but they are more frequent in other animals, in which, it may be remarked, the external rupture of the bladder never has been observed. But a still stronger objection is afforded by children having been born alive, whose bladder had no outlet whatever. Now, these cases either prove that, in the human fœtus, the kidneys secrete no fluid, or that the fluid, in these cases, like that secreted into all the shut cavities of the body, is reabsorbed. The former supposition appears improbable, both from the size of the kidneys in the fœtus, from their being amply supplied with blood, and from urine being secreted immediately after birth, and during the fetal state of other animals. The latter supposition is not incompatible with the hypothesis advanced.

It is perhaps necessary to apologize for entering so fully into a mere hypothesis, liable to such objections; but, in these complicated deviations, it is of considerable importance to have some general principle to which they may be referred; and the refutation of an hypothesis frequently leads to the discovery of truth.

From the occurrence of this malconformation, physiologists may derive some assistance in investigating the functions of the urinary organs, and the action of diuretics. It is probable that considerable absorption of the watery part of the urine takes place, while it remains in the bladder; for Devilleneufve observed, that it is considerably less saline, as it flows from the ureters, than when discharged in the usual manner by the urethra. The celerity with which the secretion of urine is increased after drinking diluent fluids, is also very remarkable, as the time seems to be by no means sufficient for its reaching the kidneys in the course of circulation. Mr Cooper mentions, that if Ann Carter had any thing given her to drink, *in a few minutes* her urine began to flow *guttatim*; and Devilleneufve expressly says, that, in the man he examined, after having drunk, four or five minutes scarcely elapsed until the flow of urine increased; and after certain diuretic liquids, such as cider, he had scarcely time to cross the room (to use his own expression), until the discharge of urine was doubled.

Although this malconformation is totally incurable, the miserable situation to which it naturally gives rise admits of some relief from art. Matthew Ussem always wore a kind of concave shield of tin applied to the abdomen, so as to include the bladder, and penis. Its lower part formed a kind of funnel, leading to a reservoir placed between the thighs, which he emptied occasionally, by uncorking a tube proceeding from the bottom part. By this contrivance two very important purposes were served. It protected the sensible surface of the bladder from being irritated and inflamed by the clothes rubbing against it; and, by collecting the urine, it prevented the clothes from being spoiled, and becoming intolerably fetid. It was, in fact, an artificial bladder, and, on account of the unnatural distance between the thighs in these cases, it was worn with very little inconvenience. In some instances, however, Professor Roose's proposal of connecting the reservoir with the funnel, by means of an elastic flexible tube, might be adopted with advantage. By the use of this simple and cheap machine, Ann Carter would have been preserved from that extreme degree of misery which she experienced before she was admitted into St Thomas's Hospital; it therefore cannot be too generally known; and if the annexed sketch of it shall ever become the means of saving a single individual from similar wretchedness, I shall not have written this essay in vain.

Explanation of Plate III. Fig. 1.

a a, The shield for covering the bladder.
b, Loop for fixing it on by a strap passed round the body.
c, Funnel.
d, Reservoir.
e, Tube for emptying it occasionally.

III.

Observations on the Yellow Fever of America, tending to prove that it does not depend on any peculiar Modification of the Atmosphere; that it is not preceded by any Malignant Change in the Type of other Diseases; and that it is not accompanied by Glandular Swellings or Carbuncles. By Dr James S. Stringham, Professor of Chemistry in Columbia College, New York.

As all Europe appears to be much interested in our endeavours to investigate the nature of that epidemic which has for several years produced such devastation in our most flourishing sea-port towns, I shall take the liberty of offering a few remarks upon some of those facts which have been stated by the Editors of the Medical Repository relative to the disease, as it prevailed here during the last summer.

You will find the statement to which I allude in the 26th Number, which is in the first volume of the second hexade. Without professing myself an advocate either for the doctrine of importation or of local origin, I cannot but view the account there exhibited as strongly inviting criticism, particularly as it respects some of those circumstances which the Editors have related as introductory to the disease in question. I shall briefly compare their statement, as to the diseases which prevailed here before the appearance of the yellow fever, with that given by physicians in other cities, where the same fever also raged. They state that, in the course of June, palsy and apoplexy occurred with *unusual* and *alarming* frequency; in some instances, they assumed appearances which more generally belong to *malignant fevers*; and to attentive observers of the succession of diseases, and the precursors of pestilence, they gave no small apprehensions of impending mischief. Towards the end of June and July, they say that many cases of scarlatina anginosa were observed; and that, during the same time, instances of catarrh and croup occurred, which could not be satisfactorily referred to variations of temperature. They also state, that before this time (viz. the end of June and July), instances of suspicious fevers had been observed in various parts of the town, which exhibited the strongest marks of malignity, &c. This is indeed a lamentable picture of the state of our city from the month of June, particularly as, at that time, Philadelphia appears to have been uncommonly healthy, notwithstanding which, the yellow fever made its appearance there nearly at the same time as in New York. The Editors quote a letter from a respectable physician in that city, who (they say) was himself an eyewitness, and a principal actor in the occurrences which he relates. From the authority of this gentleman, it appears that, "during the spring and early summer months of the year 1803, the inhabitants of Philadelphia enjoyed a state of health uncommonly favourable. Except among children, who were, as usual, affected by the disorders of the season, physicians found but little to call forth the exercise of professional skill. The few complaints that occurred among adults, were of the most *common*, *mild*, and *manageable* nature; nor did any event take place to darken the prospect arising out of this flattering state of things, till between the 19th and last of July,' &c. The Editors also present us with a letter from Dr Dick, health-officer of the port of Alexandria, in which the yellow fever likewise raged. This gentleman takes no notice of any peculiar symptoms having occurred in the diseases of that place previous to the commencement of this fever, which, even during the whole season, he remarks, 'was singularly limited in its operation.' He further informs us, that the common autumnal fever existed at the same time in Alexandria; and it is worthy of notice, that nothing is said as to any peculiar malignity attached to it.

With regard to their observation, that palsy and apoplexy occurred with *unusual* and *alarming* frequency, I cannot find that it is confirmed by the experience of the most respectable practitioners in this city. From the best information which I have been able to obtain, it appears that, during the months of June and July, there were about five deaths from apoplexy, three or four from palsy, and about the same number from scarlatina anginosa. Surely no person, who is acquainted with the extensive population of our city, could infer from this, that these diseases occurred with *unusual* or *alarming* frequency. That several of those who are predisposed to apoplexy, and whose predisposition is increased by an intemperate and irregular manner of living, (circumstances which I know to have existed, so far as respects some of the cases alluded to), should be attacked on the approach of a hot season, may easily be accounted for, without having recourse to any peculiar modification of the atmosphere; but that either apoplexy or palsy have assumed the appearance of malignant fever, is a circumstance almost unknown to those physicians who were 'eyewitnesses and principal actors in the occurrences which' took place. I say *almost*; because I have conversed with *one* gentleman upon the subject, who appears to have connected the two diseases in the case of a young lad who died with malignant fever, which, he thought, commenced with symptoms of palsy. But, from the very circumstance of the age of this patient, feel but little hesitation to assert, that his paralytic affection was intimately connected with yellow fever, and merely a precursor of the tragic scene which was to ensue. In confirmation of this opinion, I beg leave to observe, that this case did not occur until the fever had unequivocally commenced its ravages. In all the other cases which have come to my knowledge (and I have not been parsimonious in my inquiries), neither of these diseases, viz. apoplexy and palsy, were attended with any unusual or peculiarly alarming symptoms; at least, such as did occur had no kind of connexion whatever with those of malignant fever.

They likewise mention, that, 'during the months of June and July, instances of catarrh and croup occurred, which could not be satisfactorily referred to variations of temperature.' Why not? Were there no variations of temperature at that season; and, if there were, why might not these diseases be ascribed to this cause, as usual? Will either of the Editors undertake to particularize the extent to which the changes from heat to cold must be carried, in order to produce this effect? As to the suspicious fevers which occurred (exhibiting, according to them, the strongest marks of malignity), I confess I heard nothing of them; nor can I learn that any physician here had remarked them before the 18th or 19th of July, from which time we date the commencement of the yellow fever. I would not be understood as asserting that no case of malignant fever did occur before this period; but I contend, that there was no remarkable difference, either as it respected the number of persons attacked by it, or the malignity of the symptoms, from those fevers of the same type which have formerly occurred amongst us during the hot season.

I have been induced thus far to pursue my observations upon the editorial article, as it appeared in the Repository, with a view to show the inaccuracy of an opinion which has by some been adopted, viz. that the yellow fever is produced by a peculiar modification of the constituent parts of atmospheric air, and that this change is first evinced by its influence on other diseases, producing a variation in their symptoms and type, hence affording, in every case, a prognosis as to the epidemic which is to succeed. I cannot agree with the Editors in supposing that, from the diseases which occurred here in the spring and early part of the summer, any indication could be derived as to the necessary succession of yellow fever. But, even granting all that could be asked in this particular instance, still we perceive that, in Philadelphia, the health of its inhabitants was *uncommonly good*; the morbid affections, which occurred there, were of the *most mild* and *manageable* nature; and we have no documents whereby to suppose that the same circumstances did not exist in Alexandria; notwithstanding which, the yellow fever raged in both these places. How happens it then, that, in New York alone, the precursors of pestilence were to be traced? Inasmuch as any alteration in the constituent parts of the atmosphere may be involved, after a careful and attentive analysis, I hold myself ready to prove that no such change did exist. My experiments were conducted in that part of the city which was most severely affected; and, so far as it respects the atmospherical proportion of oxygen, azote, and carbonic acid, there was no perceptible difference between such situations and those which were several miles distant. In order to show how very opposite such a result was to the preconceived opinions of some of our medical men, I need only mention an instance of one gentleman who called on me for litmus paper, with an expectation that, by exposure to the air, it would become converted to a red colour, in consequence of the action of the nitrous acid, which he supposed to have been formed in the atmosphere by the union of an increased proportion of the oxygenous with its azotic part. After twenty-four hours anxious expectation on his part, the paper was returned to me in the same state as before the experiment.

The Editors notice another circumstance as to the symptoms which accompanied the yellow fever, and which, in my opinion, merits particular attention. They remark, 'that the phenomena which distinguish the oriental forms of pestilence, viz. glandular swellings and carbuncles, were observed in a few instances, but not more frequently than heretofore.' From this it would appear, that our fever in no respect differs from the oriental forms of pestilence, since, in some instances, it is accompanied by those phenomena which more particularly distinguish them. In a few solitary cases, it appears that swellings, especially of the maxillary glands, have occurred; but, in almost every instance, these have been traced to the previous exhibition of mercury. To place the matter in a clearer point of view on this, as well as on the subject of carbuncles, I shall candidly submit to your inspection such facts as I have been enabled to collect.

On the 12th of August the Corporation opened an hospital at Bellevue (about three miles from this city), for the reception of the poor, and of such strangers as might be attacked with yellow fever. Two physicians were appointed to attend those who were brought to this institution. It appears that the whole number of patients admitted from the 12th of August to the 29th of October amounted to 186, and that of these about one half died.‡ In a late conversation with Dr Foster (one of the physicians appointed to this charge), he informed me, that notwithstanding the number of sick he had attended, and the various and malignant forms of the disease which his situation compelled him to witness, not one case, either of carbuncle, of axillary, or of inguinal swellings, had occurred. He mentioned one instance, in which the maxillary glands appeared to be somewhat affected. This patient was admitted on the twelfth day of the disease, and had taken large quantities of mercury before she came into the hospital, as was clearly evinced from the state of her mouth and fauces. In this instance the gland suppurated, and the patient recovered.

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‡ Several persons were received in the last stage of the disease, and some were actually dying at the time they entered.

I am authorized to state, from Dr M'Lean, physician to the Dispensary, that nothing like carbuncle, as connected with yellow fever, ever came under his observation. He remarked that, two or three years ago, he had been in the habit of exhibiting calomel very freely in this disease, and that the swelling of the maxillary glands was frequent; but that, since he had changed his mode of treatment, no case of glandular affection had occurred to him. In addition to these, I have conversed with the four physicians appointed to attend the sick poor, all of whom concur in the statement just given. Dr Bayley, resident physician at the marine hospital on Staten Island (principally instituted for sailors), observes that, in former years, slight inguinal tumours did occur in some cases of ship fever, in the proportion (as he supposed) of about one in the hundred; but that no case of yellow fever, attended with glandular swellings or carbuncle, had ever been observed there since the establishment of the hospital. All these accounts are amply confirmed by the experience of several of the most respectable practitioners in this city, the results of whose private practice I have consulted, none of whom ever met with a case of yellow fever attended with carbuncle, or any kind of glandular swelling. For my own part, I declare that, from what I have seen of the disease, I never should have suspected that these appearances could have been enumerated, even in the most distant manner, as among its concomitants.

IV.

Observations on the Efficacy of Muriate of Lime, in the Cure of Scrofula and other States of Debility. By JAMES WOOD, M.D. Physician to the Newcastle Infirmary and Dispensary.

IT is not improbable, that the muriate of lime is used, and with as much advantage, in every part of the kingdom, as it is in this place. With regard to the northern part of it, at least, this probability is much increased by the circumstance of its having obtained a place in the late Edinburgh Pharmacopœia. Still, as I have not met with a single report of the virtues of this invaluable medicine, nor even any allusion to these, in any of the works intended for the quick dissemination of medical facts, I cannot any longer withhold presenting to the more immediate and general notice of the medical world, the muriate of lime, as a valuable remedy in scrofula and other states of debility.

I have already written on scrofula; and whatever intention I may have of offering to the public more enlarged observations on this disease, yet, in the mean time, I would feel in some degree accountable for the sufferings of all in this complaint, if I were not to endeavour to make known, as much as in my power, that those sufferings may be relieved, and frequently entirely prevented, by the remedy I have mentioned.

In my inaugural dissertation on scrofula, published in 1791, I endeavoured to show, from the experience I had had in that disease, that it was entirely a disease of debility, to be prevented and cured by those means which would prevent or remove that debility. At that time, though the tonics, with which we were acquainted, such as cinchona and steel, had the good effects to be expected from them, yet they were neither decisive at the moment, nor permanent; they only seemed to suspend the disease, until some change of the constitution of the patient removed the scrofulous action: And though, in the same dissertation, I mentioned my experience of the good effects of the aqua calcis, as a remedy in this disease, yet I could not ascribe to it, given separately, greater virtues than to cinchona, or other tonics, although I mentioned having perceived more evident advantages from them when conjoined, than from either alone. Cinchona bark infused in lime water, or the aq. benedict. of the old Pharmacopœias, were the forms I then used.

Very soon after the period I have mentioned, the muriate of barytes was recommended as a remedy in scrofula; and it came, I believe, into pretty general use. I found its good effects so uniform and certain, though slow, that it quite superseded, in my practice in this disease, all other remedies from the materia medica: and, situated as a physician to two extensive charities, the Infirmary and Dispensary here, where the objects labouring under this complaint are numerous, and the cases often of the worst kind, I felt relieved from one of the opprobria medicinæ, and wished, or rather hoped, not for any further victory over such a disease, as hectic often disappeared with its use; and the knife of the surgeon was rendered unnecessary, by caries yielding to its power.

While experiencing uniformly good effects from the muriate of barytes, the muriate of lime was recommended to my notice, and introduced into the Infirmary by Mr Ingham, one of the surgeons, as possessing great powers in discussing tumours and obstructions of different kinds. The use of the remedy was confined, for some time, to particular species of obstructions; and afterwards, when given in scrofula, it was commonly united with decoction of cinchona bark. It was not, therefore, until the beginning of the present year (1804), that I determined to make trials and experiments with the muriate of lime by itself, and more particularly in the cure of scrofula. These trials were made on a very extensive scale, and they were immediately decisive in its favour. The muriate of lime produced all the good effects which I had experienced from the muriate of barytes, with two great advantages in addition; its action was more immediate, and no bad consequences attended an over-dose. With the muriate of barytes it was necessary to begin with the smallest dose, and to increase it *very gradually* to a certain dose; otherwise harm, not good, ensued. With the muriate of lime, we may commence with a full dose; and so far from there being any reason to fear from it any deleterious effects on the system, it is, on the contrary, wholesome in every point of view. It was often suspected that muriate of barytes might contain some portion of arsenic. Whether this was so, or whether barytes itself acted as a poison in a certain dose, is not at present to the purpose; it is sufficient to mention, that, beyond a certain dose, muriate of barytes occasioned sickness, tremors, and loss of power. It is therefore no small advantage to possess a remedy, not only more immediately powerful, (for it was always weeks before we reached the active dose of muriate of barytes), but also unattended with any fear as to the effects of a large dose, or of a graduated one long continued. In these respects, muriate of lime possesses advantages over muriate of barytes as decided as the vaccine over the variolous disease.

After what I have generally stated, I presume it to be superfluous to refer to particular cases in which the muriate of lime has been, and may be given with advantage. Indeed, the detail of such would far exceed my present limits; and any solitary one would not add any strength to what I have generally stated. I may only mention, that it has been given with advantage in incipient phthisis pulmonalis from a scrofulous cause; in all the external forms of scrofula; in rickets; and in all cases of hectic from great discharges.

A few words may also be added as to its mode of preparation. I first used it in the form of crystals, by dissolving three grains in an ounce of water; but the process of crystallizing the salt was found to be too tedious and difficult for general use, and did not possess any advantage over a fluid solution of the carbonate of lime in muriatic acid. There was an inconvenience, however, I own, found attending the preparation in a fluid form, as well when the salt was dissolved in water, as when the medicine was prepared in a fluid state; I mean, the uncertainty of having it always of an equal strength. The method, therefore, adopted by an ingenious chemist of this town seems to have a preference. He does not crystallize the solution, but allows it to remain in a fluid state for use, and ensures its being of an uniform strength, by always reducing it to a given specific gravity. Perhaps it may be said, that if the proportions were always exactly the same, those, for example, of the Edinburgh Pharmacopœia, that the product would have an uniform specific weight. But as the quantity of water carried off by evaporation, or during the effervescence, is various, so I think the method adopted by the chemist to whom I have alluded is preferable. If a convenient specific gravity were once ascertained, the strength of the solution would be the same all over the kingdom. Perhaps the proportions of the Edinburgh Pharmacopœia do not differ much in strength from that which I used prepared in a fluid state, without any evaporation which can be avoided. In this state, I have found 30 drops for children, or a drachm for adults, given in water, twice or thrice a day, a sufficient dose. Those who are already acquainted with the value of this medicine may not receive much accession of knowledge from these observations; but those who are not, will gain, in the muriate of lime, a power over the scrofula which they had not before; and indeed it has, in most cases, entirely superseded the use of cinchona in our Infirmary.

V.

Case of an Encysted Tumour occupying the greater part of the posterior Portion of the right Hemisphere of the Brain. By T. Bateman, M. D. F. L. S. Physician to the Carey Street Dispensary, and to the Fever Institution.

Eliza Appleby, aged five years, (residing at No. 12. Great-Wild-Street), about a week after the disappearance of the measles, was suddenly seized with convulsions of the whole body, which continued, with very slight intermissions, for nearly two days. In the fits, the limbs of the left side were observed to be rigidly extended, while those of the right side were in constant motion. After the cessation of the convulsions, she complained of a pain in the right side of the head, and frequently exclaimed, 'That there was something coming in her head.' From that time also, the mouth was drawn towards the left side, and she was observed to squint much; but the nurse is ignorant when her sight became affected. She was hot and thirsty for some days, but never lost her appetite. Her bowels continued regularly open, and the limbs of the left side were in a state of paralysis. The feverish state soon subsided; but the other symptoms continued for the space of five weeks, with occasional spasmodic twitches of the right side, and of the muscles of respiration; and she was again (August 22d) attacked with convulsions. The left limbs, as before, were rigidly contracted during the paroxysms, while those of the right side were constantly in motion. She was now, by the direction of a physician, ordered to have *mercurial ointment* rubbed into her thighs, which, in five or six days, produced great soreness of the mouth; she was also blistered on the head. The convulsions recurred once on the 23d, and then left her. After the application of the blister, a soft swelling was observed arising near the sagittal suture, which extended itself obliquely down the right parietal bone to the anterior part of the ear. On September 6th, the parents applied to the Dispensary in Carey Street.

She now lay on her back, and screamed violently, if any attempt was made to raise or turn her. She seemed to be, in general, without pain, but occasionally made momentary complaints of pain in the right side of the head, and put her hand to the external tumour; but she appeared speedily to forget it; often talked in a lively way to the other children, and sometimes repeated her childish verses, &c. as in health. Her temper had become extremely irritable. She never had any tendency to stupor or coma. Her hearing was perfect, but her sight completely lost; the pupils were dilated, and the right eye was turned towards the nose, while the axis of the left eye was directed forwards. She had no thirst; the skin was cool, and the pulse scarcely accelerated. The appetite was voracious; she was very frequently asking for food; but if the demand was not immediately complied with, she seemed for a few minutes to forget that she had made it; all that was given to her she ate greedily. From time to time she lay silent for a minute or two, grinding her teeth strongly together, and with the eyes and eyelids in rapid motion. The bowels were slightly costive. The left arm and leg had somewhat recovered their powers, but were nearly useless; and she was daily growing more emaciated. The external tumour apparently contained a fluid of a thick consistence.

Pressure on the tumour produced no pain, except round the circumference of it; it caused no stupor, nor did it increase the other symptoms.

It appeared, from these circumstances, that this swelling had no communication with the brain; and, by the recommendation of my judicious colleague Mr Pearson, on the 14th of September it was punctured with a lancet, and five or six ounces of pure pus were evacuated.

I ordered her $\frac{1}{4}$ grain of digitalis twice, and afterwards three times a day, at first with $\frac{1}{4}$ grain of calomel; but that, having purged her much, was in a few days omitted.

Oct. 9. The tumour increased again for a few days, but is now quite gone. She has continued to take the digitalis till to-day. She complains less of her head; has greatly recovered her flesh and healthy complexion. The other symptoms continue unchanged. With these exceptions, the functions are natural. There are no symptoms of fever. She was ordered to discontinue her medicine.

—— 26. Has continued till to-day nearly in the same state, except that she has been again rather losing her flesh. This morning she was attacked with frequent convulsions of the whole body, the right side being now nearly as much affected as the left; the lower extremities being rigidly extended, and both arms, but more especially the right, in constant motion. Between the paroxysms she lies quiet, seems perfectly sensible, but is unable to articulate, and often appears to sleep; complains of no pain. The pulse is now frequent. Bowels open.

Nov. 6. She has taken the digitalis again when it could be given. The convulsive attacks have been more frequent these few days past. She now seems quite insensible; takes no food; groaned a good deal these two nights; breathes at present with great labour and with a stertorous noise. Pulse very frequent, but distinct and regular. The eyes are glassy and dull, and much sunk. The strabismus and blindness continue, but the pupils are not much dilated. The strength is much sunk. She is evidently moribund.

—— 7. Died at five this morning.

On examination after death, the head was observed to be large in proportion to the body, and slightly prominent on the right side; the scalp on that side adhered more firmly to the cranium; the sutures were perfectly closed.

On opening the head, the dura mater on the right side was found adhering very strongly to the cranium, and to the pia mater; or rather both these membranes adhered firmly to the brain. The dura mater on that side was thickened, and more opaque than natural.

On the left side, its structure and degree of adhesion were natural, as well as the external and internal appearance of the brain.

The right hemisphere, especially in its posterior part, was obviously more tumid, the convolutions were much less distinct, and its surface more even and smooth than natural. On cutting into it, the substance was firm and tough, and with very little appearance of the intermixture of the cortical part. The posterior lobe was nearly filled with a globular sac, which was separated with the greatest facility, by the fingers, from the surrounding substance of the brain. The sac was very vascular, of a strong texture, and considerable thickness, and contained about 4 ounces of pure pus: it was about three fourths of an inch distant from the cranium, and surrounded on all sides by the substance of the cerebrum, except a very small portion which was next the posterior part of the right ventricle, and formed a small part of its boundary.

The ventricles were all considerably distended with water.

It may be doubted whether the emaciation was in this instance retarded, or rather removed, by the influence of digitalis, notwithstanding its well-known powers of diminishing irritation, and the hectic which accompanies severe organic affections; but it is probable that its sedative effects, combined with the removal of the irritation of a large external tumour, produced the temporary alleviation of hectical symptoms.

The preceding case is not offered with a view of deducing from it any general conclusion. It seemed valuable on account of the connexion of the symptoms with the morbid state of the organ, as ascertained by examination after death; and, on that account, worthy to be recorded. We are yet very ignorant of any marks of discrimination, in the living body, of pressure or irritation, as applied to that very complex organ, the brain. The relations of the older anatomists have thrown little light upon this subject, in consequence of the imperfect accounts they have left us of the symptoms. There is a case well related by Platerus, and copied by Bonetus in his Sepulchretum,* which, in the course of the symptoms, somewhat resembles the foregoing case. A tumour of a smaller size and greater solidity than the one before us, being of a substance like the coagulated white of an egg, was found seated in the *anterior* portion of the right hemisphere; convulsions nevertheless occurred. From six very valuable cases, which are too little known, from their being published in a work of very limited circulation among medical practitioners, * Mr Anderson, surgeon in Leith, has drawn the following conclusions.

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* Sect. *De oculi affectibus*, Obs. I.

1. When one hemisphere of the brain is affected, it generally produces morbid symptoms on the other side of the body.

2. When both hemispheres are affected, the whole body suffers.

3. Though only one hemisphere is affected, when the injury is great, the whole body suffers.

4. Though the cerebrum alone is hurt, it produces morbid symptoms in all muscles of voluntary motion, whether their nerves arise immediately from the cerebrum, the cerebellum, or from the medulla oblongata.

5. In cases of external accident, where one side only is affected, the prognosis is more favourable than when both sides suffer.

The only other approach to generalization that I have met with, is an observation by Dr Baillie. † 'It is worthy of remark here,' he says, 'that when tumours of any kind press upon the thalami nervorum opticorum, or the optic nerves themselves, within the cranium, vision becomes impaired in various ways; and that, when tumours press upon the tuberculum annulare, or the medulla oblongata, convulsions are very apt to occur.' The first part of the observation will, I believe, be allowed by every one to be correct. But the last, I apprehend, is not invariably supported by the records of pathology; and, with the greatest deference to such high authority in morbid anatomy, it may be questioned whether we are yet in possession of a sufficient number of facts to warrant any general conclusion.—*Ars longa, judicium difficile.*

VI.

Two Cases of Acute Rheumatism, treated with Opium; and some Observations on the comparative Merits of that Method, and of the Treatment which is founded on the Principle of Depletion. Communicated by J. J. De Roches, M. D. Physician to the City Dispensary, and Fellow of the Medical Societies of London and Edinburgh.

Frances Picard, a married woman, aged 27, strong and healthy.

Sept. 24, 1804. She was seized two days ago with cold shiverings, succeeded by heat, and pains in her knee-joints and

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[*] Transactions of the Royal Society of Edinburgh, Vol. II. p. 17.

[†] Morbid Anat. p. 457.

wrists. They are now swelled, red, and painful. Much thirst. Pulse 106, and very strong, Has taken a purgative yesterday.

Sumat vespere Pilul. ex Opii puri gr. iss. et repetatur cras mane, meridie et vespere. Bibat Decoctum Avenaceum ad libitum; vel, si vires deficerent, Decoctum Carnis et *Gin* valde dilutum cum Aqua calida. Jaceat intra lanea tegumenta.

Sept. 26. A copious sweat broke out about half an hour after she had taken the first pill; it was kept up in a greater or less degree for 36 hours, and the strength supported by weak broth and toddy. To-day she feels languid and giddy when sitting up; the affected joints are stiff, but neither painful nor swelled. Belly costive. Pulse 94, and not so strong.

Sumat Pulv. purg. statim.

—— 28. The powder has operated; the appetite is good, and the use of the limbs becoming more free and easy. Sense of languor and giddiness gone. Pulse natural. Sleeps well.

—— 30. Symptoms continue the same.

Sumat Pulv. Cinch. ʒ j. bis in die.

Oct. 4. Feels well. Discharged cured.

JAMES BEU, aged 36.

Jan. 10. 1805. Was seized five days ago with acute pains in his limbs and joints, accompanied with cold shiverings; they are now swelled and painful. Upon the first accession of the pains, he took gin, which did not give him any relief. Bowels costive. (This account was received at the Dispensary from the patient's wife: the man had been for a fortnight under my care for a chronic diarrhœa, the remains of a former dysenteric affection.)

Sumat Pulv. purg. statim.

Bibat Decoctum Avenaceum ad libitum, et jaceat intra lanea tegumenta.

—— 11. Upon visiting him to-day, I found him with all his joints, particularly his knees, swelled, and very painful. The powder has operated to-day, and once only; he has been lying between blankets, and drinking warm gruel, which has produced some sweating, and somewhat relieved the pains. Pulse 96, and strong.

Sumat Pilul. ex Opii puri gr. iss. ter in die.

Accinctus ad sudorem bibat, ad libitum, Decoctum Avenaceum.

—— 13. The first pill produced a copious sweat, which was kept up by three succeeding ones for 30 hours. The sweating soon relieved the pain, but brought him very low, notwithstanding that broth had been substituted for gruel. The swellings have disappeared. Complaints of pain in his head and back. No stool. Was up when I called.

Sumat statim Pulv. purg.
Utatur Diæta nutriente.
Sumat Pulv. Cinchon. ʒ j. ter in die, incipiens cras.

Jan. 14. Sleep much disturbed last night. The powder has operated twice. Pain of head gone. Limbs stiff, but not painful. Thirst not very urgent. Not so faint to-day. Pulse 106, and not so strong.

Contin. Pulv. Cinchonæ.
Infricetur partibus rigidis Linim. Saponis.

—— 15. Continues nearly in the same state. Can walk up and down stairs with a little assistance. Took by mistake, yesterday, a purging powder, which operated several times. Rested ill. Pulse 96. Stiffness of back greater to-day. Little thirst.

Contin. omnia.

—— 16. Appetite improving. Some stiffness of the left thigh and leg. Rested ill.

℞ Mist. Mucilag. ℥ viij.
Acid. vitriol. dilut.
Spir. Lavend. comp. ana ʒ j. Misce.
Sumat Coch. ij. majora, ter in die, cum Pulv. Cinchonæ.

—— 20. Some griping from the mixture. Is improving rapidly in his appetite and strength. Pulse 88, and of natural strength. Belly rather costive.

Contin. Med.

—— 24. Recommended to use sudden cold applications to his back, after which he is to have the part well rubbed with warm flannel in the morning.

—— 27. Has used the cold application once only, and with advantage. Did not know that it was to be continued.

Repet. Pulv. Cinch.
Repet. Aqua frigida, bis in die.

—— 30. Back much better. After having been out, he has felt some pain in his right shoulder. The right arm still continues weaker than the other. Appetite very good. Is working now at the loom.

Utatur fotu salino calido parti affectæ.

Feb. 1. The washing has rather augmented the pain for the moment. On the whole, he is well and hearty. Continues regular at his work.

Utatur Aqua frigida, ut antea.

Discharged cured.

Cases of acute rheumatism cannot be recommended to the notice of the reader, either as rarities, or as likely to afford any new information to the dogmatical nosologist, who has irrevocably placed *rheumatism* among the phlegmasiæ, and treats it leisurely, with all due attention to the antiphlogistic regimen, in spite of the painful obstinacy of the symptoms, and the waste of life, which the complaint and the abuse of words conspire together in carrying often to an alarming length. That rheumatism differs in its nature from common pneumonia, enteritis, hepatitis, may be rendered probable,—

1. By the difference in the termination of the respective morbid actions of those parts. Acute rheumatism very seldom terminates in suppuration, gangrene, or exudation of lymph: if it does not terminate speedily in health, the parts affected are left in a wasted, irritable, and atonic state. Inflammation of the lungs, stomach, bowels, &c. if they end not soon in resolution, will produce suppuration, gangrene, or adhesions.

2. The general pyrexia is a necessary symptom of the inflammation of the viscera; the local affection ceases when the inflammatory action of the vessels ceases. In acute rheumatism, on the contrary, the pain has been known to continue, as before, after the pulse had been brought by digitalis below the natural standard.

3. Acute inflammations of the viscera terminate in a short space of time, compared to that during which the symptoms of acute rheumatism have been known to continue unabated.

4. Experience shows that the practice so generally successful in cases of common phlegmasiæ is, upon the whole, but of little efficacy in the cure of acute rheumatism; that rheumatic patients are, by the loss of blood, freed rather of the faculty of feeling, than of the cause of their painful sensations, which repeatedly return on their recovering from the temporary exhaustion; that blood-letting has made more cripples than effected cures among them; in short, that the most strong and healthy constitutions, falling into the hands of the most skilful and sagacious practitioners, have been frequently known to move the compassion of the bystander, and to excite a strong suspicion, that the event would have been more fortunate to both, if there were one genus less among the numerous tribe of phlegmasiæ.

The nosological dislike to opium, in pure inflammation, is so strong, that its very name shocks the ears of the steady practitioner, regularly bred in the Cullenian school; and patients are left sleepless, comfortless, bloodless, but full of pains, until it pleases their medical attendants to declare that the stage of acute inflammation is over. It is fortunate, however, that men exist, who, either from mere good sense, or from the blind spirit of opposition, are naturally inclined to distrust the soundness of notions the most generally received, when they appear inadequate to the views they were designed to answer. Such has been the case with some of our most respectable practitioners of the metropolis. Blood-letting in acute rheumatism is by them laid aside; and to opium alone they have dared to trust for its cure. The practice is so well known, and its good effects so generally acknowledged by all who have repeatedly witnessed them, that it will not be deemed improper in me to deduce from the success of opium, in the treatment of acute rheumatism, a collateral proof of the unsuitableness of the present nosological notion concerning the nature of that complaint, when we compare the result with the known influence of opiates in other cases of phlegmasiæ.

The two cases above related, have been chosen among many others of a similar sort;

1. Because both patients had been previously attacked with the same disease; both had been repeatedly bled in the day, and made to sweat at night; one of them had been kept under the rod for three months, the other for two; the former was left unfitted for any sort of business for three other long months, the latter for one only.

2. Because *Beu*, naturally a weak man, and so much debilitated, besides, by a long continued diarrhœa, that his children must have begged for their bread in the street, or been thrown naked on the parish, if, true to academical instruction, I should have been squandering away the pabulum of life, with the happy prospect of leaving an industrious father, for months to come, bemoaning, in an helpless state, the practice that saved his life, only to prolong his sufferings. If I have insisted much on this point, it is because that consideration is of importance in our practice among the indigent classes of society. With them, labour, and daily labour alone, can keep body and mind together; and small will be the use of dispensaries, if their attendants ever lose sight of the peculiarity of their situation. Nor is the use of opium confined to those cases only, in which, from general debility, that of the lancet might be most injurious. The woman Picard was a stout, healthy woman; and, nevertheless, the disease may be said to have yielded to opium in less than four days. I am informed, upon very good authority, that this practice has been almost invariably successful among some of the stoutest peasantry of Great Britain; and although I am far from supposing that there can be no case of acute rheumatism in which the cure is to be premised by the loss of blood, I would never have blood-letting considered as the main ground of our treatment. In some cases of particular determinations of blood, in some metastases of rheumatic affections, blood-letting may become

necessary, as we sometimes let blood in nervous disorders, in the eruptive fever of small-pox, &c. whenever urgent and accidental symptoms require it.

The rheumatic pyrexia seems to be owing to a peculiar irritation, which is removed by large doses of *opium*; while, at the same time, by determining its action to the skin, by means of warm covering and copious dilution, we do away its bad effects on the circulating system, and employ the morbid energy of the vessels in keeping up, for a certain length of time, the action of the excretories of the skin, the cessation of which seems to be the most general cause of the complaint. That determination to the surface is the *sine qua non* of the cure: unless it be effected, *opium will not relieve, but rather augment the sufferings of the patient.*

I shall terminate the observations which I have taken the liberty to state, by quoting the words of the late Dr Heberden, a man whom forty years of experience had taught to disregard the dictates of schools, and to attend to his own powers of perception, in preference to those of the most respectable and most respected of his predecessors.

'*Sydenhamus opio uti prohibet in hoc affectu; pace tamen tanti medici, dixerim dolores sic impune leniri, et somnum tuto invitari. Præterea, meo judicio, opium non tantummodo importuni mali præsidium est, sed multum confert ad ipsum morbum tollendum.*' *

VII.

History of two Cases of Tumour in the Breast; with some Reflections. Communicated by Henry Reeve, M. D. Fellow of the Medical Societies of London and Edinburgh.

Mary Cuyler, aged 24, a married woman, of melancholy temperament, with black eyes and black hair, was admitted into the Norfolk and Norwich Hospital for a tumour in her right breast. There was a small hard knot in the left breast, which had remained ten years, without producing any pain, and without undergoing any visible alteration. She gave the following history of the progress of her present complaint. In the beginning of September 1803, she first discovered a small knot in her right breast, but felt no pain or uneasiness from it. It continued nearly in the same state, or kept changing almost imperceptibly, till January, when it began, without any apparent cause, to be enlarged, and to press against the skin and surrounding parts. Its progressive increase then became more rapid, and has continued so till the present time. The tumour is now very large. There is no puckering of the skin, no contraction of the nipple. The integuments of the whole breast have a smooth appearance. The surface of the tumour is even, and covered with dark blue veins. It has not the irregular hardness of a carcinomatous tumour. There are no swellings under the axilla, and no apparent disease in the neighbouring parts. The tumour is moveable, and affords the sensation of its contents being fluid. She feels little pain, except what seems referable to the weight and distension of the tumour. Her general health is now tolerably good; but she has been lately under the care of a physician for general weakness and swelling of her legs; complaints not apparently connected with the disease in her breast. After remaining three weeks in the hospital to watch the progress of the swelling, it was found to increase so rapidly, and it became so painful from the stretching of the skin, that it was deemed expedient to remove it. No topical remedies were employed. A small puncture was first made into the tumour, which discharged a few ounces only of gelatinous fluid. It was then removed by the knife. It weighed 10 lib. 2 oz.; and, before its removal, it measured half a yard across, and ⅘ths of a yard around. When divided with the knife, it had the appearance of a condensed cellular substance, or hardened steatoma. Every portion of the diseased breast was carefully dissected from the pectoral muscle. Some integuments were preserved, and, as they had no marks of disease, were placed in contact with the subjacent parts. The patient went on well for a fortnight after the operation; she recovered her health; the wound assumed a healthy and granulating appearance; some parts, which were covered by the integuments, healed by the first adhesive inflammation, and the exposed surface was considerably reduced in size. At the end of the second week, a small fungus arose from the ulcerated surface. This was succeeded by several others in different parts of the sore. They were of a pale red colour, and had the appearance of granulations rising above the surrounding parts, from excess of morbid action. Pus was secreted in large quantity. No hæmorrhage took place. One of these fungous excrescences was so slightly attached, that it was easily removed by the finger nail being insinuated under it. The rest, which were more firmly attached and deeper seated, were removed by the knife. The spots whence these excrescences were removed looked well for three or four days; then they assumed their former shape. Fungus arose again, and spread so rapidly, as to cover the whole surface of the wound, and even to extend over the margin of the surrounding skin and integuments. The breast had the cauliflower-like appearance, though the parts in contact with it did not seem to partake of this morbid action. No glandular swellings occurred, and the skin remained unaffected. The patient complained very little of pain in the part. One day (July 25), she was attacked with acute pain in the right side of her head, accompanied with pain in the right eye, with dilatation of the pupil and impatience of light: No inflammation followed; and these symptoms subsided in a few days. Her general health became much impaired by the constant and profuse discharge of pus, and by hectic fever. She left the hospital, at her own request, in the beginning of August, and she lingered about a month, and then died. The fungous excrescences attained a very great size before her death.

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* Gul. Heberden, Commentarii de Morborum Historia et Curatione, p. 347. De Rheumatismo.

Whilst M. C. was in the hospital, her sister, ætat. 18, unmarried, of the same temperament and habit, was admitted for a similar complaint. She had a tumour in her right breast, and it corresponded in its history and progress with that of her sister's, already described. It began in the form of a small knot, about a year ago, without any pain; it continued almost entirely the same for some time, till two months before her admission into the hospital, when it began to increase, without any apparent cause; and within this last fortnight it is considerably enlarged. Her general health is perfectly good in every respect. There are no marks of scrofula, either in her or in her sister. She was unwilling to submit to any operation, from the dread of the melancholy event of her poor sister's case. She went home into the country. The tumour continued gradually to increase till it burst. On visiting her (February 1805) she was found sinking rapidly; suffering exquisite pain, the large tumour hollow, and the cavity studded, as it were, with fungous excrescences, discharging profusely fetid matter. She could not continue long in this hopeless state of aggravated suffering. It may be proper here to mention, that two of these patients' brothers died about the period of manhood, affected with some anomalous complaints in the head; their mother died dropsical; their father is living, a strong and hearty man.

In executing the painful task of recording such instances of formidable and unalleviated diseases, where all our hopes are baffled, and all our means of cure fail, it is some consolation to reflect, that instruction may be gained even from disappointment. If any apology were necessary for the minuteness of the detail, or if any objection should be urged against the history itself, as being destitute of utility, we might quote the high authority of *Lord*

Bacon, who alludes to these unsuccessful records in his profound Reflections on the Means of advancing Medical Science. 'Neque igitur dubitabo (says he) inter *desiderata* reponere opus aliquod de curationibus morborum, qui habentur pro *insanabilibus*; ut evocentur et excitentur medici aliqui egregii et magnanimi, qui huic operi, quantum largitur natura rerum, incumbant;—quando hoc ipsum, *istos morbos pronunciare insanabiles*, neglectum et incuriam veluti lege sanciat, et ignorantiam ab infamia eximat.'§

The first question which presents itself, in reflecting upon these two unfortunate cases, is, What name can be assigned to the disease? If the symptoms so ably stated by Mr Abernethy in his Classification of Tumours be admitted, as characterizing all carcinomatous tumours, it is evident that we must look to some other definition to arrange the cases of Cullyer; for in these the leading characters of cancer were wanting. They seem to resemble that singular disease called *Fungus Hæmatodes*, so well described by Mr Hey of Leeds; yet there was no hæmorrhage, no dark-coloured fungus like coagulated blood. However, the rapid progress of the disease, its reappearance after extirpation, and its resistance to all remedies, may perhaps prove, that it partook more of the nature of that very formidable class of tumours than of any other hitherto described. *Heister*, indeed, in his account of cancer, (chap. xvii. B. 4.), describes, in general terms, the manner in which these two cases began and terminated; but the slow and progressive increase of morbid action, and the derangement of the structure of all parts in contact with it, is now generally considered as the usual course of true cancer.

Mary Cullyer was married in January, and about that time the tumour in her right breast began to increase. She considered herself pregnant too; and this change in her constitution might excite the local diseased action, or at least accelerate its progress. Such a cause could have no influence in her sister's case. The wound, after the removal of the breast, ceased to heal kindly as soon as the integuments which were saved had united to the parts underneath; and it became necessary that new skin should be formed, or the fibres of the old skin be extended, in order to complete the cicatrix. This process of skinning, even in healthy constitutions, is always slow, and apparently a work of difficulty. Perhaps the series of actions necessary for the formation of a covering to the granulations was changed to a morbid state by some peculiarity in the system at large, or in the part. With regard to the means which ought to be adopted to prevent the fatal termination of such cases as these, it is wrong to expect complete success from one measure because another has failed.

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§ De Aug. Scient. cap. 2. lib. 4.

In these cases, we have seen the effects of the disease being left to nature, and we have witnessed the unavailing attempt of art. Early and complete removal of tumours in the breast appears universally recommended. The removal was looked upon as complete in the elder sister's case; and the early admission of it was refused by the younger. Many other remarks might be added, but they are unnecessary. The history of these, and of similar cases, will abundantly show, that much remains still to be learnt respecting the formation, the distinction, and the best mode of treating this curious and important class of diseases. It remains now only for me to state, that I am indebted for some particulars of these two cases, the whole progress of which I had not an opportunity of observing, to my much esteemed friends at Norwich; and I am obliged especially to Mr Colman, one of the surgeons at the hospital, under whose more immediate care both these patients were admitted.

VIII.

A Case of Cancer of both Testicles, which terminated favourably by the supervention of Scurvy. Communicated by Mr John Livingstone, Surgeon of the Cirencester.

On the 6th of June 1795, (the day after the *Cirencester* East-Indiaman sailed from Portsmouth), James Foster, ætat. 35, who had the preceding night succeeded in imposing himself on the ship as a healthy seaman, was discovered to be entirely unfit for duty, in consequence of cancer affecting both testicles and spermatic cords.

He appeared to have been a very stout man, nearly six feet high, fair complexion, and red hair. He was now somewhat emaciated, and his countenance indicated great suffering from pain. He said that he had lived a very irregular life for some time past; that lately he had been half starved, concealing himself from the press; and that he had hurt his testicles by falling into a ship's hold three weeks before. These, with many other particulars, were probably not true, but calculated to conceal that he had made his escape from Haslar Hospital a few days before he came on board the Cirencester.

On examination, the testicles became considerably enlarged; their surfaces felt very unequal and hard. He complained much of pain from pressure. The anterior part of the scrotum appeared

IX.

Practical Observations on the Pneumonic Diseases of the Poor.

By Charles Badham, M. D., Physician to the Westminster General Dispensary.

Having had, for the last two years, extensive opportunities of making observations on disease, from my connexion with a public institution in which the cases are very numerous, (the Westminster General Dispensary), I have endeavoured to improve them, by recording, from time to time, any thing which has appeared important, or particularly interesting. In looking over my notes, I have selected some remarks, which I send as an early contribution to your new Journal.

Of the diseases to which the labouring poor are subjected, none, I apprehend, are more frequent or more severe, than the diversified affections called *Pneumonic*; and as they are the first of Dr Cullen's order of Phlegmasiæ on which I find any remarks, I shall begin with them.

Our cases of Pleuritis, while equally dangerous, have been always more insidious than the disease described in the First Lines under this title. In several which have terminated in suppuration, the symptoms, though constant, have been so very slight, that venesection has scarcely been indicated. In one of these cases, in which I resolved to have the patient bled, from a belief that he would easily bear it, although the symptoms were not urgent, we afterwards found, on opening the chest, several pints of matter; which circumstance, till within a day or two of his death, could not by any possibility have been suspected. I saw this man for the first time on the ninth day of the disease: had he been bled earlier, there is much probability that he would have recovered. I fear we rely too much on blisters, and are too scrupulous in the use of the lancet in pectoral disorders. There are at least very few in which cupping might not be employed with advantage.

I have seen a great number of infant-children labouring under genuine pleuritis. Many of them have died, and those which have recovered were bled profusely. In the beginning of this winter, from a child of two years I took ten ounces of blood within forty-eight hours. The child was bled thrice, and would not, I believe, have recovered without the third bleeding. With children ill of pulmonary complaints, of whatever nature, there is certainly no time to lose; and how inadequate are the inert and trifling medicines commonly employed, or at least recommended, the event too often shows. Some of these little patients, however, have lingered in danger of suffocation every moment from the mucus, which they never expectorate, with purple lips, and every mark of interrupted pulmonary circulation, for a week or longer. These cases no person can mistake; and cupping has appeared the best method of bleeding. Leeches are somewhat uncertain, and besides scarcely ever within the purchase of the poor, and are never supplied by Dispensaries. Blisters have been employed, of course; but in several instances they have been succeeded by large and very unmanageable ulcerations, sometimes of such appearance, that it has been necessary to lay aside the proper treatment of the complaint, and have recourse to bark.

There are cases of pulmonary disease, sufficiently frequent, and yet to which the practitioners of this island do not appear to have attended enough, I mean in their writings; for I cannot suppose that many important circumstances in the practice of physic escape us here, to be detected in Germany or in France. Yet it is often in the writings only of the physicians of these countries that we find those remarks in detail, to which our own experience is perhaps fully adequate; but which we are content merely to have acquired for our individual instruction.

It is to the valuable practical work of *Stoll* that we are indebted for some excellent remarks on an affection apparently pleuritic, to which my attention probably would not have been called, but from some particular difficulties which attended two cases under my care about the beginning of September 1803, at which time I read them. Since that time, I have seen several cases of the same kind, and have therefore inquired a little into the history of the complaint. It is a severe pectoral disorder: it belongs to rheumatism: it is called by Stoll *Pleuritis Rheumatica*; while he has given the name of *Spuria* to another similar affection attended with bilious symptoms. It is perhaps better named *Pleurodyne Rheumatica*.

This disease is certainly a rheumatic affection, (*Rheumatica inflammatio*, Stoll), occupying probably *all the moving fibres* concerned in respiration, just as we suppose that they are all affected with *spasm* in *asthma*. It has been remarked by Hoffman, who faithfully describes the symptoms, (with a curious piece of pathology), and terms it 'periculi expers,' and 'nihil aliud quam rheumatismi species, familiaris iis qui catarrhis doloribus rheumaticis et arthriticis obnoxii sunt.'

I am satisfied that Sydenham has noticed this complaint, and had distinguished it from *pleuritis*. An uncommonly mild autumn (says this accurate observer) was succeeded by sudden cold weather towards the end of the month of October 1675. An epidemic fever had recently prevailed, of which a cough had been a common symptom. Those who had suffered by this fever were chiefly the subjects of the rheumatic pleurodyne, which Sydenham correctly describes, without giving it a name. It began with a pain in the head, the back, and some of the limbs; and though the pungent pain in the side, the difficulty of breathing, the colour of the blood drawn, and the rest of the symptoms which are usual in pleurisy, seemed to indicate that this was an essential pleurisy; nevertheless 'ab illa methodo medendi, quæ veræ pleuritidi conveniebat, abhorrebat admodum.' This is an addition to the known character of Sydenham for accurate observation, which I did not think it right to omit or to abbreviate.

Still the disease was not much noticed. Boerhaave describes it indeed in his 878th aphorism; and Van Swieten wishes to show that it was known to Galen. Dr Cullen mentions it in his Synopsis as a variety of rheumatism, but says nothing of it in the *First Lines*. It has been also noticed by Dr Home in the Clinical Experiments, (whose observations may still be consulted with much advantage); and by Dr Darwin in the Zoonomia. But it is to Stoll that we owe the able comparison of its symptoms with those of true *pleuritis*, and an accurate diagnosis.* Notwithstanding all which, I am satisfied that the complaint is very often treated, without being known.

In the first case I met with, the patient was twice bled, on the supposition of pleuritis vera, so very violent were the symptoms. She had been my patient for rheumatism, which had confined her to bed for a week. I learned afterwards that all the pains of the limbs had ceased in the course of one night; and without having left the apartment, she was attacked apparently with pneumonic inflammation, but really with the rheumatic pleurodyne. Her cure was accomplished by the warm bath, opium and calomel, blisters, and the ordinary treatment of rheumatism. There is at present under my care a robust man, to whom I was called, with the most severe and obstinate case of rheumatism I have ever seen, more than a month ago. He has experienced the same recession of his pains, and has only been relieved from pulmonary symptoms of the utmost severity by similar treatment. He is not yet well, and the sightest exposure to cold threatens to bring back his complaints in all their intensity.

There is one remark of Stoll which has been always applicable in my cases, and which may be easily remembered: '*Præcedebant* plerumque artuum, sive inferiorum sive superiorum, dolores lacerantes rheumatici.'

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* Ratio Med. i. 38.

The practice of Dr Darwin has appeared to me to answer better than that of Stoll;—in particular, the utility of ether and opium. But of this rheumatism affecting the organs of *respiration*, we may have the same gradations and modifications, of acute and chronic, as when other parts are attacked; and this, of course, will create corresponding variety in the treatment.

Under what name may the more chronic pectoral complaints, especially those of people advanced in life, be most conveniently arranged? Neither the terms of *Perip. notha*, nor cough with dyspnœa, have appeared to me sufficiently discriminative, or even applicable. These complaints are abundantly familiar. There is cough of variable violence, with expectoration of thick mucus, with rather a sense of weight than of pain in the chest, and occasionally a violent fluttering or pulsation at the *scrobiculus cordis*. Dyspnœa is the chief symptom; the tongue is generally foul; the pulse small and frequent, sometimes irregular or intermittent, seldom preternaturally slow; the urine universally high-coloured, and commonly turbid, even before it cools. In the greater number of cases there is no tumid or livid appearance of the countenance. With a pectoral complaint of this kind children are sometimes affected, and women I think quite as often as men.

After a few winters, such affections often prove fatal. In some cases the patients are completely worn out, and die exhausted: in others, their complaints terminate in hydrothorax. This last event is much more common than has been supposed. I have met with so great a number of cases of it, that I am disposed to include it always among the sources of danger in protracted pulmonary ailments, especially when the dropsical predisposition exists. But notwithstanding the dangerous tendency of hydrothorax, from whatever cause it may arise, I will venture to say that, in many instances, patients have recovered from it by the aid of medicine, more easily than we usually find them to do from the less suspected pulmonary obstructions which precede and produce it. Dr Cullen's remark, that hydrothorax is rarely cured, or even palliated, must be understood to apply only to those cases in which there is some formidable and permanent obstruction, which interferes with the pulmonary circulation, and which is out of the reach of medicine. In any other sense the remark is not extensively applicable.

Congestion, arising from any cause, often produces hydrothorax: and such dropsy is not necessarily incurable: it is often relieved, is often permanently removed. In one case medicine has been four times efficacious, with the interval of several months. The patient had been supported by pillows in an arm-chair for many days, unable to indulge for a moment in a posture approaching the horizontal, yet was so far restored as to sleep soundly in her bed for several weeks. During the last summer, dropsy of the chest took place under circumstances which might be expected to produce it more frequently, viz. in an advanced stage of consumption. It was one of the few cases in which the unequivocal diagnostic of *Auenbrügger* was afforded. On this account the case was seen by several medical practitioners. The water was fairly removed by *elaterium*, (for the combination of *mercury with squill and digitalis*, which I usually employ, was quite unavailing here.) The radical disease, which seemed to have been suspended, (or which was lost in the more urgent symptoms of hydrothorax), assumed again its unequivocal aspect; and the patient died about two months ago entirely extenuated.

X.

Historical and Critical Analysis of the Functions of the Skin.

By George Kellie, M. D. Leith.

THERE is not perhaps in the whole animal economy, an organ, whose functions deserve more the attention of the physician, than the skin.

How extended this organ is, how often its functions are deranged in disease, how many diseases have been attributed to these derangements, is well known.

Yet the physiology of the skin is but little understood; its functions are not well ascertained; nor have the nature and value of any one of these been accurately explained. We know that the skin is the general covering of the body, the seat of the sense of touch, and the organ of perspiration. But the value of this function is not yet fixed; the laws to which it is subjected are not determined; and of the nature of the matter perspired we are still very ignorant.

By the skin, we are also supposed to maintain certain relations with the surrounding element. Is the skin also an inhaling organ? Is any thing absorbed from without? and what? Is water imbibed, or air? Is the atmosphere decomposed at the surface, as in the lungs, by respiration? Is water formed, and carbonic acid, by the combustion of hydrocarbon, secreted by the skin?

These are questions, without doubt, worthy of being solved, but still disputed; and the materials yet before us are, I fear, insufficient to enable us to lay any sure foundation.

The way, however, is laid open. Experiments must be varied, and repeated on a larger scale than hitherto; every product must be examined by the nicer chemical tests, and nature kept to the torture till forced to declare the truth.

'Non solum copia major experimentorum quærenda est, et procuranda, atque etiam alterius generis, quam adhuc factum est; sed etiam methodus planè alia, et ordo, et processus continuandæ et provehendæ experientiæ, introducenda. Vaga enim experientia, et se tantum sequens, mera palpatio est; at cum experientia lege certa procedet, seriatim et continenter, de scientiis aliquid melius sperari poterit.' *

Passing over the sense of touch, all the other doctrines connected with the present investigation may be conveniently arranged under the functions of *Perspiration*, and of *Inhalation* or Cutaneous Absorption; and in this order it is proposed to consider them.

1. PERSPIRATION.

The cuticular discharge very early occupied the attention of physicians. It was known to the ancients, nor had its influence on health escaped their observation. Obstructed perspiration, as we learn from Celsus, was considered by Asclepiades as the cause of diseases.† And this pathology, under various modifications, has descended even to our own times, and has, in no small degree, influenced the practice of physicians.

We find little information, however, concerning this function before the 17th century, about the beginning of which the perspiration became the subject of the most patient research, and of the most extensive experiments perhaps ever undertaken. But the method of experiment, and of chaste induction, was then but imperfectly understood. Hence Sanctorius, who, with admirable industry, dedicated thirty years to his experiments, published his aphorisms only, many of which are the mere speculations of the author, and cannot now be regarded as strict conclusions from the suppressed experiments.

Sanctorius was followed by a long list of illustrious emulators, who laboured in the same field. Dodart, Keil, Rye, Robinson, John de Gorter, Linnings, Hartman, and others, prosecuted these experiments. Even a British Sovereign (Charles II.), amidst the bustle of a gay and profligate court, found amusement in repeating them. These were conducted by weighing the body, the ingesta and egesta; so that the quantity of perspiration was ascertained by the loss of weight.

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* Bacon, Nov. Organ.

† Cels. lib. 1. cap. 1.

From such experiments, Sanctorius, in the climate of Venice, estimated the perspiration so high as 5 lb. in the twenty-four hours. Linnings, from a series of experiments, continued during twelve months, in South Carolina, fixed the average amount at 60.10 oz.; Rye at 56¼ oz.; Robinson valued it at 46 oz.; Gorter at 49 oz.; and Keil at 31 oz.

Considering the nature of the experiments, and allowing for the difference of climate, and of the ages and habitudes of the individuals, greater conformity in the results could not perhaps be expected. Haller, after comparing a number of these observations, concludes, that the average amount of the daily perspiration may be in the warmer climates about 60 oz. and in the more temperate 56, 46, and 30 ounces.[*]

It will, however, be readily perceived, that these calculations give not the measure of the perspiration alone, but of the cutaneous and pulmonary discharges together. To separate these, to fix the quantity of each, still remained an important problem, the solution of which has only been attempted of late years.

Mr Abernethy having, in six hours, collected from his hand and wrist, inclosed in a glass jar, about ʒiij of the perspired fluid, endeavoured to ascertain the quantity of the daily exhalation, by measuring the surface of his body, and by finding the proportion which the hand and wrist, subjected to the experiment, bore to the whole. The surface, from which ʒiij of the perspired matter had been collected, he estimated at one twenty-fifth part of the whole; so that if the perspiration is at all times and in every part equal, the loss which the body sustains in one day would be about 2½ lb.[†] But we can place no great confidence in calculations of this kind, which rest on postulates which are very doubtful, and on which, indeed, Mr Cruickshank estimated the daily perspiration at 7 lb.[‡]

Much more accurate is the ingenious method invented by Lavoisier and Seguin. In their experiments, the whole body was enclosed in a silk bag, varnished with elastic gum, impenetrable by air or moisture, having a small opening carefully cemented round the mouth, through which the person might breathe; so that whatever came from the lungs escaped, while the whole of the cutaneous discharge was confined within the bag.

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[*] Elementa Physiolog. Corp. Human. tom. v. p. 68.

[†] Surgical and Physiological Essays.

[‡] Cruickshank on the Insensible Perspiration.

By weighing the body, therefore, before putting on this dress, and immediately after leaving it, the total loss by the pulmonary and cutaneous discharges was ascertained; the amount of the loss by the lungs was known, by weighing the subject of experiment on first entering the bag, and again at the end of the experiment, immediately before coming out; which, subtracted from the total loss, gave the value of the cutaneous perspiration.

From repeated trials in this way, Seguin and Lavoisier found the mean loss, by the cutaneous and pulmonary exhalations, to be about 18 grains in the minute, or 2 lib. 13 oz. in twenty-four hours. The pulmonary discharge amounted to 15 oz.; so that there remains 1 lib. 14 oz. as the mean quantity of daily perspiration. *

From this enumeration of the various experiments and calculations which have been made, we may conclude, that the diurnal loss by perspiration is considerable; and I think we cannot far err in fixing its average amount at 30 oz. But this must necessarily vary in different individuals, and in the same individual at different times, according to the quantity and nature of the ingesta, the vigour of the circulation, the temperature, and other external relations.

Having thus examined what has been done with a view to determine the quantity of perspiration, I proceed now to inquire, what knowledge we have attained of the composition and properties of this discharge.

The first inquirers seem to have been much delighted when they observed the perspiration arising in the form of vapour from the heated body, or ascending like smoke from their shadows.

As the matter of perspiration escapes from the surface insensibly, it is difficult to collect it in sufficient quantity for chemical examination; hence our knowledge of the nature and composition of this secretion is still very imperfect. To Tachenius, who, by means of oiled sheets, collected a few ounces in the fluid state, it seemed chiefly water. But Lister, who also examined the perspired fluid, thought it had a saltish or urinous taste. †

The greater part of the matter of perspiration is doubtless water, but it certainly contains other impregnations, the nature of which is not, however, well ascertained. It is said to be frequently acid, and to change the blue vegetable colours to red. Berthollet indeed thought he had detected the presence of the

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* Memoires de l'Académie des Sciences, 1790, page 610.

† Haller. Elementa Physiologiæ, tom. v.

phosphoric acid; but Fourcroy remarks, if this acid were constantly secreted, it must accumulate on the skin, as it is too fixed to be volatilized with the aqueous vapour of perspiration. [*]

Mr Abernethy having procured ʒiij of the perspired fluid, evaporated one half, and there remained on the glass a small residuum, which had a very slight taste of salt; the other half was suffered to stand many days, in which time no change appeared. It did not alter the colour of vegetable blues; no coagulation or precipitation of animal matter was produced by the muriatic acid; neither was any change produced by the addition of pure alkali. It appeared, therefore, to Mr Abernethy, 'that the water of perspiration contains little of any thing, except a very small portion of salt.' [†] But from a single experiment on so very small a quantity, and where the more delicate chemical tests were not employed, no certain information can be obtained. From the strong odour of the perspiration when profuse, and from the tinge it communicates to the linen, there is reason to suppose it contains a particular animal matter. In the perspiration of the horse, an animal substance, of the nature of urea, has been detected by the distinguished chemists Vauquelin and Fourcroy, who have also discovered, that the phosphate of lime, in considerable quantity, is left by the evaporation of the perspired matter on the skin of the same animal. [‡]

It appears then, upon the whole, that the qualities of the fluid matter of perspiration are not well known. It consists chiefly of water, but probably contains a particular animal matter: the presence of saline substances has been ascertained, but their kind remains undetermined.

Besides the condensable vapour which is exhaled, it has been also alleged that gaseous fluids are perspired by the skin.

For my own part, I must confess, that after having examined the great number of experiments made by different philosophers, and the objections and counter experiments of others, I have not been able completely to satisfy myself.

The Count de Milly was the first who called the attention of philosophers to this subject. He had often remarked the accumulation of small air bubbles on the surface of his body when immersed in the warm bath. At length, by means of a funnel and inverted glass jar, he collected, in a few hours, half a French pint of this gas, which was afterwards examined by the celebrated Lavoisier. It was incapable of supporting combustion; precipitated lime water; and suffered no change from the admixture of nitrous gas. As it differed, therefore, from atmospheric air, and contained a large quantity of carbonic acid gas, no doubt was entertained of its origin. *

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[*] Systéme des Connoissances Chimiques, tome ix.

[†] Surgical and Physiological Essays.

[‡] Systéme des Connoissances Chimiques, tome ix.

Dr Ingenhouz, to whom we are so much indebted for many valuable experiments on vegetables, was not able to collect this gas so abundantly as the Count de Milly. He procured it, however, in quantity sufficient to convince himself that it differed essentially from common air. It contained little or no carbonic acid, and appeared to be chiefly azotic gas. It did not escape the observation of Dr Ingenhouz, that much of the air which appears on the surface of the body, when immersed under water, was to be attributed to atmospheric air adhering to the skin. This, therefore, he took care to separate: but still the air continued to escape from the surface in an infinite number of small bubbles; and these he always found more vitiated than the former, which confirmed his belief that the gas was perspired from the skin.

'J'ai observé que l'air contenu dans les grosses bulles qui paroissent d'abord qu'on plonge le bras sous l'eau, est d'une qualité moins mauvaise que celui qu'on obtient des petites bulles qui succedent.' †

Mr Cruickshank too, when engaged in some experiments on the insensible perspiration, found that the air in which his hand had been for some time confined was vitiated; that a candle burned dimly in it; and that when washed with lime-water a precipitation took place. ‡

But Dr Priestley denies that any gas is perspired by the skin. He repeated the experiments of Dr Ingenhouz, and never could observe the appearance of any gas arising from his body when he employed boiled rain water, from which the air had been completely expelled, and detached the adhering bubbles from his arm.

The air obtained by Dr Ingenhouz, he observes, 'was just that mixture of fixed air, and partially phlogisticated air, that pump-water, which he recommends for the purpose, generally abounds with.' ‖

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* Histoire de l'Académie Royale des Sciences et Belles Lettres de Berlin, an 1777, page 35.

† Experiences sur les Vegetaux, tome 1. page 152.

‡ Experiments on the Insensible Perspiration, by W. Cruickshank.

‖ Experiments and Observations, vol. v. p. 103.

Such also was the result of Mr Jurine's experience, who, after remaining in the bath at different temperatures, from 18° to 30° Reaumur, for hours together, never could procure a single bubble of air from his skin. §

There is reason therefore, to believe, that Milly and Ingenhouz had been deceived, and that the gas which seemed to escape from the skin in their experiments, was no other than the air of the water; an appearance which may be exhibited by plunging almost any other substance, as a piece of glass or metal, under water.

Mr Cruickshank's experiments, however, seemed to prove that air, which has been confined for some time in contact with the skin, becomes changed; though Dr Priestley again maintained, that the perspirable matter has no such effect upon the air, but leaves it as wholesome as ever.

But a very extensive set of experiments performed by Mr Jurine of Geneva, and published in the Memoirs of the Royal Society of Medicine, would seem to confirm the observation of Mr Cruickshank. For, although Mr Jurine could not collect any air from his skin when immersed in the warm bath, he always found the air confined about the skin much vitiated.

Jurine fixed well-dried bottles under his armpits, and round his waist, where, having remained an hour, they were accurately corked and removed, that the contained air might be examined by the usual tests. In these experiments he always employed the mercurial trough. This air was found, on different occasions, to contain $\frac{7}{100}$ $\frac{7\frac{1}{2}}{100}$ $\frac{6}{100}$ $\frac{4}{100}$ of carbonic acid gas.

He next enclosed his arm in a glass cylinder, containing 685 cubic inches of air. One extremity of this vessel closely embraced his arm, round which it was cemented. To the other extremity was fitted a bent tube, which, during the experiment, was plunged under water in the pneumatic trough.

After two hours, the air of the cylinder was found to contain $\frac{8}{100}$ of carbonic acid gas. In another experiment, the same quantity was obtained after one hour; but the proportion of carbonic acid gas was not greater, at the end of the second, third, and fourth hour.

Lastly, Jurine, thus satisfied that carbonic acid gas was formed by the skin when in contact with the air of the atmosphere, imagined he should find the same gas under the bed-clothes which confine the air round the body during sleep; and in different experiments on the beds of different individuals, he accordingly found that this air contained $\frac{6}{100}$ $\frac{4}{100}$ $\frac{7}{100}$ $\frac{8}{100}$ of carbonic acid gas.[*]

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§ Histoire de la Societé Royale de Medecine, tom. x.

Seguin, indeed, has objected to the conclusions of Mr Jurine, that the carbonic acid found so abundantly in these experiments, was the product of respiration, which from its superior gravity falling vertically downwards, and forming an atmosphere round the body, displaced the air in the open vessels under his armpits.[†] But I can hardly conceive the possibility of this. The air of expiration must be projected to a considerable distance beyond the armpits; and if the carbonic acid gas from the lungs is really disposed to fall downwards so immediately, it could not surely be accumulated in such quantity under the armpits; for the proportion of this gas in some of Mr Jurine's experiments was nearly equal to that contained in the air of expiration at its issue from the lungs.

Besides, the objection of Mr Seguin will not apply to the $\frac{8}{100}$ parts of carbonic acid gas discovered in the cylinder in which the arm had been confined; for in this experiment all communication with the atmosphere was interrupted. It is true, indeed, that the quantity of carbonic acid did not increase in proportion to the duration of the experiment; a difficulty which Jurine himself remarked, and Seguin has insisted on.

It is to be regretted that Jurine had not employed some more accurate test than the nitrous gas, for ascertaining the proportion of oxygen; and we know, from his experiments and observations on the air of respiration, how little he understood even the language of his eudiometer with nitrous gas. Perhaps the oxygen might have been found diminished, in proportion to the formation of carbonic acid, which would in some measure have explained his experiment.

Gattoni, indeed, in a paper inserted in the same volume,[‡] has given an account of some experiments, which do not perfectly agree with those of Mr Jurine. But Gattoni, who operated with the eudiometer of Volta, does not appear to have employed lime-water, the proper test of carbonic acid. Nor do his experiments always agree. He never discovered, we are informed, any remarkable difference between the air confined near the skin, and that of the atmosphere; and yet a difference was frequently observed, which he is willing to attribute to the ignorance or inattention of the subjects of experiment. And in one class of experiments made by enclosing the lower extremities and loins of some beggar boys, hired for the purpose, in large leather bags, where the air was found considerably vitiated, Gattoni roundly accused his ragged friends of gross misbehaviour, though the poor lads denied the charge.

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[*] Memoires de la Societé de Medecine, tom. X.

[†] Histoire de la Societé de Medecine, tom. X. [‡] Ibid.

After all, I doubt much if we can draw any very important conclusion from the various experiments I have now been reviewing. The air immediately surrounding the body, and in contact with the skin, appears to contain a much larger proportion of carbonic acid gas than is usually found in the atmosphere. So far, the experiments in general seem to agree; and those of Mr Abernethy, I think, confirm the observation.

Mr Abernethy's experiments were performed, by introducing his hand and wrist under a glass jar inverted in the mercurial trough.

1*st*, The jar being filled with quicksilver, he collected, in the space of sixteen hours, one half ounce measure of air, which had escaped in small bubbles, from every point of the surface of the immersed hand. Two thirds of this gas were absorbed by lime-water; the remainder suffered no diminution by the mixture of nitrous gas.

2*d*, The experiment being repeated under water, a small quantity of azotic gas only was obtained, the carbonic acid having been, in the opinion of Mr Abernethy, absorbed by the water.

3*d*, The jar containing seven ounces of atmospheric air. After five hours exposure of the hand, the air in the jar was diminished about half an ounce. Of the remaining air, one ounce was absorbed by lime-water, with precipitation of the lime. By the test of nitrous gas, the air was found to contain nearly one sixth part less of oxygenous gas than it did before the experiment.

4*th*, The jar containing seven ounces of azotic gas. At the end of two hours, rather more than one ounce measure of carbonic acid gas was produced.

Similar experiments were made with hydrogenous, nitrous, and oxygenous gases. And in every case the quantity of carbonic acid gas obtained was nearly the same.*

'Experiment shows then,' says Mr Abernethy, 'that carbonic gas is *perspired* from the vessels; for into whatever air the hand be immersed, the quantity of carbonic gas given out will be nearly the same.'†

But if carbonic acid gas were really thus perspired from the vessels of the skin, it should be easily collected, not only under every kind of gas, but under water, as in the warm bath; which is contrary to the most accurate experiments, and indeed to the experience of Mr Abernethy himself. Besides, there is reason to fear that Mr Abernethy had not been sufficiently guarded against the errors to which such experiments are liable. It is true, he was careful in agitating and washing his hand beneath the quicksilver in the trough, before introducing it within the jar, and also in withdrawing it, that as little air as possible might adhere to the hand, and be carried into or abstracted from the jar. Still, however, in the way these experiments were conducted, it must have been very difficult altogether to avoid this source of error: for what Mr Abernethy often gives us as the result of a single experiment, must indeed be rather regarded as the accumulated event of several experiments. Thus, in the first I have mentioned, where half an ounce of air is said to have been collected from the hand and wrist in sixteen hours, we may well suppose that the hand had been many times introduced and withdrawn, and this at longer or shorter intervals of repose. Indeed, this appears to have been actually the case, from the account given by the author of the experiment. 'After *an hour* had elapsed,' Mr Abernethy observes, 'I *withdrew* my hand. The bubble of air which now appeared on the top of the quicksilver, was, I suppose, in bulk equal to one *scruple* of water. In *sixteen* hours, I collected an *half ounce* measure of air,' &c. And in other experiments, of nine, and of five hours duration, the case must have been the same. Now, when we reflect on this circumstance, and recollect also, that in all Mr Abernethy's experiments in which carbonic acid gas was obtained, there was always a portion of the air originally contained in the glass jar missing at the end of the experiment, and this uniformly, whatever kind of gas was the subject of trial, we cannot help suspecting, that the one might be introduced, and the other removed with the hand.

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* Surgical and Physiological Essays.

† An Essay on the Functions of the Skin, p. 121.

If we do not think ourselves authorized to conclude with Mr Abernethy, that carbonic acid gas is directly perspired from the vessels of the skin, his experiments at least appear to confirm the very general inference I have drawn from those of Mr Jurine and others, that the air in immediate contact with the skin is much vitiated, and contains a large proportion of carbonic acid gas.

I have already, in a former part of this paper, given my reasons why I do not think Seguin's account of this matter satisfactory. What then is the source of this gas, so abundant at the surface of the body, at least so frequently obtained in the different experiments of different philosophers? Is the ambient air decomposed by the stagnant matter of perspiration and other sordes accumulated on the skin? Or shall we adopt the hypothesis of some modern physiologists, and conclude, that the functions of the skin and lungs are similar?

'Il n'est pas vrai,' says Fourcroy, 'Il n'est pas vrai qu'il sort par la peau, comme l'ont voulu quelques modernes, des fluides elastiques, et notamment du gas acide carbonique; mais il y a lieu de croire qu'à la surface la plus proche de la peau, que dans ses cavités immediates il se degage, et il brule une portion de carbone; peut-être même une certaine quantité d'hidrogène carboné s'exhale-t-il par ses pores, et eprouve-t-il une combustion lente.' *

In a late number of the Annales de Chimie, there is an account of some observations made by Citizen Trousset on the aëriform perspiration. Trousset's experiments appear to have been performed after the manner of the Count de Milly, by collecting the air which escaped in bubbles from the surface of the body while immersed in the bath, and are consequently liable to the same objections. Nor, even in this way, could Trousset procure air from every individual. He could not collect any from his own body; and with several others he was equally unsuccessful. When, however, air was procured, it appeared to be perfectly pure nitrogen, without any mixture of carbonic acid gas. †

The last experimental philosopher who has paid particular attention to this subject, is Spallanzani. The detail of his experiments has not been published; but the results are preserved in a letter to Senebier, introductory to his Memoirs on Respiration. He appears to have been completely satisfied that air in contact with the skin is changed exactly in the same manner as by respiration. When atmospherical air was employed, oxygen disappeared, and carbonic acid gas was produced; but he is of opinion, that the oxygen of the atmosphere had no share in the production of the carbonic acid gas, because it was equally great when the animal was confined in gases containing no oxygen; and he therefore concludes, that the carbonic acid gas was exhaled, and the oxygen absorbed. He also remarked, that amphibious animals lived longer in the open air when they were deprived of their lungs, than when their lungs were entire, and they were confined in a mephitic gas, or had their skins covered with spirit-varnish.

I have now briefly stated the principal facts and opinions connected with this interesting subject; I have endeavoured to analyze, as it were, and to fix the value of the different experiments. This I have done with freedom, and I trust with candour and impartiality; but I have not found that any important conclusions

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* Systême des Connaissances Chimiques, tom. ix. p. 203.

† Annales de Chimie, xlv. 73.

can be drawn from them. The points in which the experiments agree, are too few to enable us to establish any theory or doctrine. Future experiments may prove the fallacy, and detect the sources of error of those we now possess; or discover to us the yet hidden secret of nature. We have on this, as on many other occasions, to lament the untimely death of the amiable and industrious Lavoisier.

> '*Quis desiderio sit pudor, aut modus*
> *Tam cari capitis?*
> ———*cui Pudor, et Justiciæ soror*
> *Incorrupta Fides, nudaque Veritas,*
> *Quando ullum invenient parem?*'

2. INHALATION.

IT had long been received as an established truth, that the skin was also an inhaling or absorbing organ; that though the loss by perspiration commonly greatly exceeded what the system gained by absorption, yet sometimes, according to the varying circumstances of external relations and conditions of the body itself, the inhalation balanced, or even surpassed, the exhalation. But of late this doctrine of inhalation has been called in question, and, in the opinion of many, has been completely overthrown. It has been said, that this absorption neither does nor can take place on the outside of the cuticle; that in every case of apparent absorption, the epidermis had been injured, or that the matter absorbed had been mechanically forced through it, and brought into immediate contact with the skin.

Haller had asserted, in his Elementa Physiologiæ, on the authority of Dessault, that the body acquired an increase of weight in the warm bath; and this augmentation of weight was esteemed an *experimentum crucis* in favour of cutaneous absorption.

'Denique vapor aquæ calidæ in manum resorbetur, et homini in balneo constituto cutis tumet et rubet, *corpus pondere augetur*, sitis sedatur, et omnia signa eduntur aquæ resorptæ, et sanguini admistæ.'[*]

Experiments, however, have since been made, with every necessary care, which would seem to contradict the position, and to prove, that the body acquires no additional weight in the warm bath.

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[*] Element. Physiolog. Corp. Human. tom. v. p. 88. edit. Lusannæ, 1769.

Seguin, from a great many experiments of this description, concludes that there is no inhalation; because the body, so far from gaining, always lost some part of its weight during immersion, although much less than in the air, in equal times. Thus, in a bath heated from 10° to 12° Reaumur, he tells us, the loss of weight was to that sustained during the same time in air as 6.5 to 17; at the temperatures from 15° to 18°, as 7.5 to 21.7; and from 26° to 28°, as 13 to 23. *

In other experiments, again, as in those of Drs Gerard and Currie, there was no increase of weight; but neither was the body observed to have suffered any loss during immersion in the warm bath.

Now, during these experiments, the body was doubtless wasting, by the pulmonary and cutaneous discharges; and yet the weight of the body either continued unchanged, or, where a loss of weight was observed, this was constantly less, greatly less, than is experienced during the same interval in air. And we might be inclined to infer, from a truth so general, and so well ascertained, an argument in favour of absorption.

It might be argued, that the loss of weight amounts to little or nothing; because, during immersion, the body acquires more by inhalation than it does or can do in the air; that the loss by the pulmonary and cutaneous discharges is counterbalanced, or nearly counterbalanced, by the increased absorption.

Those, however, who deny absorption, will not allow us the advantage of this argument. They tell us, that the exhalation by the skin and lungs is diminished, which sufficiently explains why the body loses less in the warm bath than in air. But, that the accustomed discharges are suppressed or diminished in the warm or tepid bath, is, I apprehend, far from being proved; and till this proposition is made good, the arguments against cutaneous inhalation cannot be securely maintained.

One of Dr Currie's cases merits further consideration. No experiment, I think, could turn out more unfavourably for an opponent of cutaneous absorption, than the case of Dysphagia, published by Dr Currie. Mr M——, it is true, gained no weight while in the warm bath; but the loss continually going on in the air, was, as in other trials, suspended during the immersions. Besides, 'he always expressed great comfort from the bath, with abatement of thirst;' and 'subsequent to the daily use of it, the urine flowed more plentifully, and became less pungent.' An observation precisely similar is made by Mr Cruickshank. 'A

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* La Médécine Eclairée, &c. tom. 3.

patient of mine,' says Mr Cruickshank, 'with a stricture of the œsophagus, received nothing, either solid or liquid, into the stomach for two months; he was exceedingly thirsty, and complained of making no water. I ordered him the warm bath for an hour, evening and morning, for a month; his thirst vanished, and he made water in the same manner as when he used to drink by the mouth.' *

But to return to the case of Mr M——. Dr Currie himself remarks, 'that the discharge by urine alone exceeded much in weight the waste of his whole body; and it cannot be doubted,' he adds, 'that the discharge by stool and perspiration exceeded the weight of the clysters.'—'Thus it appears,' continues Dr Currie, 'that the egesta exceeded the ingesta in a proportion much greater than the waste of his body will explain.'—'How,' he asks, 'is this accounted for, unless by cutaneous absorption?'

That the excess of these discharges above the ingesta and total waste can be accounted for by absorption only, was indeed an irresistible conclusion. Still, however, cutaneous absorption is denied; and, when forced to confess that there are cases where the egesta exceed the ingesta in a much greater proportion than the waste of the body will explain, and which can only be accounted for by absorption, they refuse this function to the skin, and bestow it most liberally, and, in so far as I know, most gratuitously, on the lungs. I am not entitled, in return, to deny the reality of pulmonary absorption; but I may surely be allowed to urge, that there is no proof that the only inhaling organ is the lungs; that there is none against the possibility of cutaneous absorption.

Is it not, on the other hand, proved, by the experiments of Seguin and Lavoisier, that the exhalation greatly exceeds the absorption by the pulmonary system? And if this is always the case, we cannot explain, by the pulmonary inhalation alone, why the egesta should, in some cases, exceed the ingesta in a much greater proportion than the waste of the body will account for.

I now proceed to examine another class of experiments, much insisted on by those who deny cutaneous absorption; I mean those experiments performed by immersing a part of the body in solutions of active drugs, the absorption of which should be indicated by their usual effects on the system.

Seguin made numerous experiments of this kind, with solutions of muriate of mercury, on syphilitic patients. And we are informed, that in cases where the epidermis was perfectly sound, neither the known effects of mercury on the body, nor any amelioration of the venereal symptoms, was ever observed.

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* Cruickshank on the Absorbents.

He also immersed his own arm in a solution of two drachms of the mercurial muriate in ten pounds of water. At the temperatures of 10° and of 28° Reaumur, no part of the salt was missing at the end of the experiment; but when the bath was at 18 degrees of the same scale, there was a loss of one or two grains of the muriate in the hour, though the quantity of fluid was not diminished.

The explanation given by Seguin, of this unexpected result, is curiously ingenious, but embarrassed and inconsistent.

At the temperature of 12°, he observes, the exhalants are in a state of contraction, and their orifices nearly closed. When the heat again is raised to 26°, the exhalation is so rapid, that nothing can enter the vessels from without; but at 18° of temperature, the orifices of the exhalants are sufficiently relaxed, and the exhalation at the same time so conveniently languid, that the solution rests quietly in contact with the matter of perspiration in the mouths of the exhalants, where it is somehow or other decomposed, a part of the muriate leaving the water of solution, and combining with the perspirable matter, with which it is carried into the system.

'Ainsi une dissolution saline à dix ou à vingt huit degrés etant mise en contact avec la peau humaine bien saine, il n'y a point d'absortion, ni de la part de l'eau, ni de la part du sel; la même dissolution à dix huit degrés mise en contact avec la peau qui ne transpire point dans l'eau à cette temperature, permet à l'humeur de la transpiration de partager le sel de la dissolution jusqu'à l'equilibre de saturation, et de la porter dans la circulation.' *

Carried into the circulation by the exhalants! In this manner does Seguin interpret his experiments. Is it not a plain acknowledgment of the reality of inhalation? But if, in one case, substances may thus be carried into the circulation, why not in many others?

I have thus reviewed the principal experiments which are thought to militate against the doctrine of cutaneous absorption. The criticisms I have hazarded appear to me well-founded; and I cannot help thinking, that the facts which had been proposed as difficulties, prove more for the old doctrine than against it.

Surely if the weight continues undiminished, in circumstances where the body is continually losing, we may infer, that something has been gained by absorption. And where the egesta ex-

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* La Médécine Eclairée, tome 3. p. 238.

ceed the ingesta in a proportion much greater than the waste of the body will explain, there absorption must have been going on.

The case of Mr M——, published by Dr Currie, is not singular. The writings of physicians abound in similar examples. They had often occurred to that excellent clinical practitioner, De Haen, who was therefore persuaded that water was imbibed. 'Haud ita mirabimur,' he observes, 'hominem 150 librarum, paucos intra dies, libris 50, et pluribus graviorem fieri, et nova paracentesi totidem aquæ libras emittere, licet toto eo tempore vix liquidi quidquam hauserit.'*

The illustrious Haller, too, with his usual industry, has collected a great many observations of the same kind. 'Olim Petrus Castellus Mascardum nominat, qui 10plo plus per tres annos minxerit, quam bibebat. Duplo plus reddebat quam biberat, et turbidam aquam alius, et triplo iterum alius. Apud Mathiam de Gradibus historia fœminæ legitur, quæ cum cibos omnes revomeret, et plus revomeret, quam sumebat ciborum, et bis per septimanam venam secaret, sanguinisque emitteret uncias 7. 8. totis 6 aut 8 mensibus, tamen supervixit. Duodecim pintæ quotidie per lotium redditæ leguntur, et quatuor amphoræ. Homo ex pectore laborans in 7 horis minxit libras 7, et in alio paroxysmo libras 10, deinde 3, 4, diebus continuis ad libras 70. Virgo nobilis quotidie 260 uncias urinæ edidit absque cibo et potu.

'Ex Gatinaria puella quotidie per 60 dies pocula minxit 16, qualia tria biberat, ut in eo tempore 1740 libris urina superaret, et super cibum potumque amiserit libras 1740, felici tamen eventu. Virgo 20 libras absque siti vel morbo per 60 dies amisit;' &c.†

Again, when physicians were engaged in their extensive statical experiments, weighing themselves, their ingesta and egesta, for months, nay for years together, they sometimes observed that, so far from losing, they had gained weight, especially during cold and moist weather. Thus, Rye, under a cold and humid atmosphere, gained thirteen ounces. Linnings, during two hours exposure to cold, acquired eight ounces and a half. The Abbé Fontana, after two hours exposure to a moist atmosphere, returned home some ounces heavier than he went out. De Gorter gained six ounces in one night; and, on other occasions, two ounces and four ounces. These observations are confirmed also by the experience of Dr Francis Home, the late professor of Materia Medica in this University. ' Having fatigued myself pretty much in the afternoon, I went to bed without supper, and was so hungry that I could not fall asleep for some time. Betwixt eleven at night and seven next morning I had gained two ounces ' *

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* Ratio Medendi, pars iv. cap. iii.

† Haller. Physiol. Corp. Hum. tom. v. p. 90.—See also, Mr Ford's Case of Dropsy, Medical Communications, vol. ii.; and Transactions of College of Physicians, vol. ii. &c.

Here then are examples of the body gaining considerably more than the ingesta will account for,—acquiring weight when neither food nor drink had been swallowed. And we have the concurring testimony of the most respectable writers supporting the same truth.

How can this increase of weight be accounted for, unless by absorption ? In such experiments, the *loss of weight*, which cannot be accounted for by the sensible *egesta*, is attributed to the *exhalation:* The *increased weight* sometimes observed, and which cannot be explained by the sensible *ingesta*, must, in like manner, be referred to the *inhalation*.

That the system may be affected by active medicines, introduced and absorbed by the skin, cannot be denied. And, were proofs still wanting to establish the doctrine of cutaneous absorption, this argument might be insisted on. It is true, that friction is commonly employed when we wish to introduce medicines by the skin, by which it is said the substance is mechanically forced through the cuticle, and brought into contact with the absorbents of the true skin. The system, however, may be affected without friction; for example, by wearing a mercurial plaster, and more certainly by mercurial fumigation; as practised by Lalonette and others.

But enough surely has been already said to establish the doctrine I have been maintaining, and to enable me to conclude, that *inhalation* is, no less than *exhalation*, a function of the skin.

What may be the limits of this function I am not able to determine. I know that Mr Abernethy entertained the opinion, that elastic fluids were also absorbed by the skin. But there is reason to think he had been deceived by appearances; and I have already pointed out one very probable source of error in his experiments.

An experimental investigation is still wanting to determine whether or not any change is effected on the air of the atmosphere by the skin, or by any part of the perspirable matter. In the present state of our knowledge, it would be rash to give a too decisive opinion. 'Quid autem tam temerarium, tamque indignum sapientis gravitate atque constantia, quam aut falsum sentire, aut, quod non satis explorate perceptum sit et cognitum, sine ulla dubitatione defendere.' *

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* Medical Facts and Experiments, page 250.

An instance is also mentioned by Dr Percival, of a horse-jockey, whose weight increased 30 ounces, although in the interval he had taken but a glass of wine.

XI.

THE INQUIRER. No. I.

Quæ sunt, quæ fuerint, quæ mox ventura, trahantur.

QUESTION. 'What are the comparative advantages of the different modes proposed for the treatment of Ulcerated Legs?'

'Cùm hæc per multa volumina, perque magnæ contentionis disputationes, à medicis sæpe tractata sint, atque tractentur, subjiciendum est, quæ proxima vero videri possint, neque addicta alterutri opinioni, neque ab utrâque nimium abhorrentia, sed media quodammodo inter diversas sententias.' *Celsus.*

ULCERS on the legs form a very extensive and important class of diseases. The frequency of these complaints, and the pain and distress occasioned by them, make them often call for the surgeon's or physician's attention. The treatment of such cases is generally looked upon as an inferior branch of practice;—an unpleasant and inglorious task, where much labour must be bestowed, and little honour gained. It is too often neglected in private and in hospital practice, or left to be negligently performed by unskilful hands. It ought, however, to be remembered, that more credit is due to the surgeon who saves one limb, than to him who amputates twenty; that dexterity in operating is only secondary in merit to skill in healing; and that an extensive cicatrix is a more honourable trophy than a well-healed stump, or a wooden leg. Different opinions have been entertained respecting the best mode of managing these troublesome diseases. In the present investigation, it is proposed to examine the comparative merits of these, and to deduce such practical conclusions as seem warranted by just reasoning and multiplied experience. To open a full and formal discussion of all the definitions, classifications, theories, and remedies, given by different authors, would at least be irregular and improper. But as, in matters of particular practice, our judgement is sometimes influenced by the personal abilities, by the experience, and by the known character and authority of the authors, it may be right here to mention, that the writers whose sentiments are principally held in view, are *Dr Underwood* * and *Mr Whatcly*, † in speaking of the advocates for the utility of EXERCISE; and *Mr Benjamin Bell* ‡ and *Mr Home*, ‖ as the advisers of the opposite system, REST.

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* Cicero.

Towards the close of the 17th century, the study of surgery was revived as a scientific pursuit; and in the works of *Wiseman* and *Read* will be found the rudiments of the best practice in the treatment of ulcerated legs, which, with some modifications, fewer indeed than might have been expected, has continued to the present time. *Wiseman* and all the old surgeons considered ulcers as occasioned by acrid and corroding humours, and only to be cured by correcting the quality of the vitiated fluids, by the exhibition of internal as well as external remedies. Their practice consisted in frequent evacuations of the system, and in a strict regard to what go under the perverted name of *non-naturals*, viz. diet, air, exercise, &c. At the same time, they applied escharotics, or strong stimulants, to the surface of the sores, to prepare for the healing process, by an action which they called *detersion* or *digestion*. With their strong local applications, (except they found that the diseased parts could be brought to resume their natural healthy action by more mild dressings), and with the use of rollers and the laced stocking, they found no greater obstacles in curing ulcers of the legs than are now usually met with. From the histories on record, it may be questioned whether they were not comparatively more successful in this branch of surgical practice; because they were more attentive to minute circumstances, and more assiduous in the application of remedies. It is somewhat remarkable in the history of this subject, that the use of bandages, mentioned by *Read*, and particularly recommended by *Wiseman*, appears to have been almost wholly disregarded for many years, till the employment was again suggested by Mr Else.[*] This gentleman accidentally observed the advantages of tight bandages, and he availed himself of them in their full extent, increasing the degree of pressure by a thin plate of lead being placed over the ulcer.

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* Surgical Tracts, 8vo.

† Whately on the Cure of Wounds and Ulcers of the Legs without Rest.

‡ Bell on Ulcers.

‖ Practical Observations on the Treatment of Ulcers.

The great difficulty experienced in healing ulcers on the legs, is attributed by Mr Bell to their dependent situation. To obviate the effects of this, rest and a horizontal position are recommended in every species of ulcer. Dr Underwood, in some introductory observations on the opinions which have been commonly assigned, endeavours to controvert them, and offers an hypothesis to explain the true cause of the difficulty so much complained of. He supposes that, in the lower extremities, there is 'a defect of *vital energy*, either general or local, owing to their being extreme parts, where the circulation is least vigorous, and occasionally impaired.' The conclusions drawn from this reasoning are, that stimulating applications are necessary for the cure of *all* ulcers, and the free use of exercise, at least with very few exceptions. Mr Whately has signalized himself as a strenuous advocate for the employment of exercise in the treatment of all ulcers, and even recent wounds, after the primary inflammation has subsided. In this short sketch of the writers on this subject, it would be wrong to omit noticing Mr Home's very excellent Practical Observations. His arrangement is simple and correct; his work contains many valuable remarks; yet he has not estimated the comparative merits of the effects of exercise and of rest, although he points out the propriety of employing both these means in different cases. On this point there is still room left for some comment. Is a patient with an ulcer on his leg to keep himself still and quiet? Is *rest* absolutely necessary for his cure? Or may he be allowed to walk about as usual? These are questions which constantly present themselves, and hitherto have received no satisfactory reply. Some assert and advise one means, some positively decide on the very opposite. The variety and the difference in all the methods which are recommended may be reduced to two comprehensive heads, *exercise* and *rest*. To render any general mode of treatment practicable and proper, the union of both these means must be necessary; and it seems strange how one of these powerful agents should ever have been adopted, and the other wholly excluded. So numerous and so various are the circumstances, apparently trivial in themselves, by which ulcers are affected, that it is in vain to attempt upon general principles to determine the *quantum* of exercise or of rest to be regarded. Whether the object be to increase action or to diminish it—to correct the local disease, or to improve the constitution—the success of the means employed will depend on the habits and physical peculiarities of individuals; respecting which, no one person can be an unerring rule to another. That general plan of treatment is most rational, which grounds the indications of cure on the view of obviating the prevailing morbid actions; while at the same time the means of fulfilling these indications are directed by attention to the causes exciting those actions. If our knowledge of the nature of inflammation, ulceration, and the production of new parts, were more accurate and precise, our curative indications might be rendered more particular, and would be more frequently successful. Acquaintance with the causes, either remote or occasional, which produce ulcers, will influence the method of treating them. This may be stated under three separate heads, which will include the different indications, and may serve to point out the instances where any one of them is more particularly applicable. *1st*, To prevent the access of air, to keep the parts soft and moist, to support the parts, and to regulate the degree of action which the natural powers are able to perform by emollient dressings, mild ointments, poultices, cold water, the use of opium, &c. and by rest and a horizontal position of the limb. *2dly*, To excite a new series of actions in the diseased part, to get rid of the ulcerative process by directly influencing the surrounding vessels and nerves, or, throughout the whole system, by the exhibition of bark, mercury, and those remedies termed stimuli, among which, exercise and tight bandages are the chief. *3dly*, To correct any specific disease or morbid action in the constitution, or in the secreting vessels of the ulcer, by mercury, cicuta, acids, &c. and by escharotic and other active topical applications.

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[*] Med. Obs. and Inq. vol. 4.

Exercise, as an universal remedy in all cases of ulcerated legs, has been much insisted on; but the advice is too general to be very useful; and, notwithstanding the number of instances adduced to corroborate the truth of the doctrine, many exceptions must be regarded. It would be easy to detail as long a list of unsuccessful attempts to heal ulcers, while the patients were allowed to use their limbs freely, and to walk about; but to state the objections in general terms may be sufficient. In cases of ulcers on the lower extremities, accompanied with a state of irritability, or disposition to violent and inordinate action, where the edges are inflamed, and the surface exquisitely tender and painful, covered with a thin ichorous discharge, free and unrestrained motion proves highly injurious; but the advantages of rest and a horizontal posture are obvious. The inflammation around the ulcer sometimes extending over the whole limb, seems owing, not to the velocity of the blood being increased in the smaller vessels, but to an interruption of circulation between the larger vessels and the capillaries: this disturbance of the equilibrium must therefore be kept up, and perhaps greatly increased, by exercise. By placing the limb in an horizontal posture, by enjoining rest, the pain and tension abate, the inflammation subsides, and well-formed pus is secreted, to the great relief of the patient's feelings. Considerable difficulty is always experienced in healing ulcers situated on the ancles, attended with a varicose state of the veins: this difficulty is rendered greater by exercise, and by remaining long in the erect posture. This posture is alluded to by the Roman satyrist Juvenal, as the cause of varicose veins in the legs:

——‘*fiet* varicosus *aruspex.*’——

It may be remarked here, that ulcers of this description, and those not few, which have come within the limits of the Inquirer's observation, have always been cured by well-applied bandages, and horizontal posture, without having recourse to the operation of taking up the vena saphena, practised by the old surgeons, and lately revived by Mr Home.

An ulcer from a wound penetrating or partially dividing a muscle, tendon, or tendinous aponeurosis on the leg, is generally attended with inflammation and pain, and becomes difficult to cure, unless precautions are taken to place the limb in an easy, quiet position, by relaxing the muscles, and keeping it in that state by rest and proper bandages. Ulcers seated immediately over a muscle or tendon are scarcely curable, but by absolute rest and well-regulated bandages, to prevent the motion of the diseased and of the surrounding sound parts. The prevailing indisposition of the limb, arising from morbid affections of the system, would form an extensive subject for inquiry, if it were thought necessary to particularize all such various appearances. Let it, however, suffice to observe, in addition to what has already been mentioned, that large foul ulcers from lues, fractured bone, gunshot wounds, lodgement of any extraneous body, and all supervening affections, such as inflammatory swelling, abscess, erysipelatous inflammation, &c.: these may justly be numbered among the exceptions to the general employment of exercise. Few remarks only are necessary to be made on the cases in which exercise and free motion of the limb are found beneficial, and conduce to the cure. Ulcers accompanied by excessive languor in the circulation, and œdematous swellings, coldness of the feet, such as are usually met with in chlorotic patients, in persons advanced in life, in persons who follow a sedentary occupation, are speedily improved in their appearance, by moderate use of exercise, with a roller applied tight from the toes to the knee. In every case, when the patient is allowed to stand much or to walk, the application of a bandage is absolutely necessary to support the cellular substance and the muscles, and also in some measure to confine their action. If proper means could be devised to regulate the local effects of exercise, considered merely as a stimulus, one principal difficulty in healing ulcers would be done away. Not only many inconveniences would be obviated, but many advantages gained; for, besides the improvement of the general health, it is found by experience, that ulcers healed under the plan of using exercise and stimulating dressings, are less liable to break out again, than those cured by rest and the milder treatment.

In the list of remedies, firm and well-applied bandages form one of the most important. By compressing the superficial vessels, they render the circulation less languid; and by the support which they give to the muscles and soft parts, they admit of the limbs being often moved without inconvenience. They keep the granulations from rising above the surface, and they dispose the skinning process to take place, by promoting the absorption of neighbouring parts: they not only invigorate by general compression, but by the warmth which they retain; and serve for a defence to the new formed parts. The introduction of the use of litharge plaster by *Mr Baynton*, may be considered a valuable improvement in this branch of practice; inasmuch as the pressure is more steady and uniform, in consequence of the adhesive property of these plaster-bandages; and besides, they are more generally applied by some skilful hand, or at least may be more easily made to press on the parts by ignorant and inattentive dressers. Where strong pressure is required, the plaster-bandage is preferable to the common roller; but the two means should be conjoined, since inconveniences will be found to arise from the employment of the plaster alone. Rollers made of flannel have been much recommended by different authors; but although in some cases they are to be preferred, they are not entitled to unlimited commendation. Such rollers are usually praised for their elasticity, and the ease with which they yield to the movements of the limbs; yet these qualities are sometimes absolute defects; for by their elasticity they are apt to give way, when tightness and steady pressure are required; and by retaining caloric, they will often increase any tendency to inflammation, and produce eruptions on the skin. Rollers made of strong linen or calico appear better adapted for common use.

In this sketch of the different practical opinions, to comment on every author who has written on the treatment of ulcerated legs, would have exceeded the object and limits of this Inquiry.

The names of Naylor, Rowley, Burns, John Bell, &c. have been omitted, because their rules of practice differed little or not at all from what has been stated from higher authority. General principles and general objections only have been noticed, and an attempt made to reconcile apparent contradictions, by pointing out some cases where both methods are useful. No one method can, in all cases, be successful; both are useful when discernment is exercised in their application. If exercise in the full extent, or rest in that degree urged by some writers, be adopted, each will, in some instances, be hazardous, and in many prejudicial. In the treatment of local diseases, as well as in derangements of the whole system at large, different modes of practice are not to be estimated in the abstract; the truth of any is more powerfully aided by experience than by assertion. By frequent appeals made to the strict test of experience, the foregoing remarks have been suggested and confirmed.

PART II.

CRITICAL ANALYSIS.

I.

An Essay on Respiration. By JOHN BOSTOCK, M.D. Parts I. & II. Liverpool, 1804. 8vo. pp. 275.

OUR knowledge of the function of respiration has been greatly advanced by the happy application of modern chemistry to the science of physiology. The facts, however, which have been ascertained, and the theories deduced from them, being dispersed through numerous works, we acknowledge our obligations to Dr Bostock for the present volume, in which he has attempted to collect and arrange these, so as to exhibit a concise and correct view of the present state of our knowledge of this important function. To this task, which he appears to have performed with great ability and judgment, he was urged by another motive. During his attendance on the fever wards at Liverpool, he had been struck with the rapid changes of temperature which the body experiences when labouring under fever. This gave rise to a course of experiments, with a view to ascertain the chemical state of respiration in fever, and in other morbid affections. He soon found it necessary, however, to make himself acquainted with what had been previously done by others; and the volume now offered to the public, must be considered as the result of his inquiries, and as prefatory to the promised observations and experiments on the morbid conditions of this function.

But the plan proposed by Dr Bostock will best be understood from his own words.

'In treating upon this subject, I shall begin by giving an account of the process of respiration: I shall, in the second part, point out its direct effects: In the third part, the different affections of respiration will be noticed, whether occasioned by the various natural situations in which the body is placed, or by the effects of morbid causes operating upon the system. I shall conclude by investigating its uses, and by an attempt to ascertain the connexion which subsists between respiration and the other functions.'

The first and second parts only of this plan are given in the volume now before us; the others are reserved for a future publication.

After giving a short description of the human organs of respiration, and of the mechanism of that function, Dr Bostock proceeds to examine the various attempts which have been made, from the time of Borrelli downwards, to ascertain the capacity of the lungs, and the quantity of air received and emitted in ordinary and extraordinary respiration.

Upon the whole, he gives the preference to the estimates deduced from the experiments of Drs Goodwyn and Menzies.

'It may be estimated,' he concludes, 'that by each ordinary expiration one seventh part of the whole contents of the lungs is discharged; and that, by the most violent expiration, somewhat more than four sevenths of the air contained in them is evacuated.'

It has commonly been admitted, that the last expiration of a dying animal is perfect; and, on this supposition, Dr Goodwyn made his experiment to determine the capacity of the lungs after a complete expiration. Dr Bostock also maintains, that after the most powerful voluntary effort of expiration, by which above 200 cubic inches of air may be expelled, the lungs will be only reduced to the state in which Dr Goodwyn made his experiments, when he found them to contain 109 cubic inches. To this opinion, however, we cannot subscribe. Such a powerful voluntary effort, or what has been called a forced expiration, is performed by bringing into action the abdominal and other muscles, by which the ribs are pulled downwards, and by prolonging the contraction of the diaphragm, so as to diminish the capacity of the thorax to the utmost. Now, it is evident that this cannot be the kind of expiration which takes place *in articulo mortis.* The last expiration will be the greatest only that can be performed by the complete relaxation of all the muscles of inspiration; so that there must still remain in the lungs a great part of that air which is expelled in forced expirations, by a more powerful and prolonged contraction of the muscles, which cannot be supposed to act in the moribund, or, if they did, must instantly relax, and restore the thorax to its mean capacity.

According to Mr Davy, the capacity of the lungs, after a forced expiration, does not exceed 41 cubic inches, which differs considerably from Dr Goodwyn's estimate. Every one is acquainted with the very ingenious experiments of Mr Davy. Dr Bostock, however, observes, that the capacity assigned by him 'is so incompatible with the ideas derived from a consideration of the anatomical structure of the thorax, that it is impossible to avoid suspecting the existence of some error or fallacy in the process which he employed.' Dr Bostock alleges that the hydrogen breathed by Mr Davy was not diffused uniformly through all the cells of the lungs; that it had not mixed itself with the air contained in the vesicles, in the same proportion as in the larger branches of the bronchia; and that, consequently, the air, upon which the experiment was made, would contain a greater proportion of hydrogen than the average of the whole air contained in the lungs; which would give the estimate of their capacity, deduced from the quantity of hydrogen, necessarily below the truth.

The first part of this Essay is conducted by an 'Inquiry into the cause of the first inspiration, and of the alternation of inspiration and expiration.'

In the second part, are considered the direct effects of respiration; the mechanical effects produced by the dilatation and contraction of the thorax; the changes produced in the inspired air; the alteration which the blood experiences during its passage through the capillaries of the lungs.

The old physiologists, entirely ignorant of the chemical changes produced upon the air and the blood by respiration, attributed much to the alternate dilatation and contraction of the thorax and lungs mechanically promoting the circulation of the blood through the pulmonary and hepatic systems, and the flow of the chyle through the lacteals. During the contraction of the diaphragm, the œsophagus was supposed to be compressed; important effects were imagined to result from the action of the same muscle upon the aorta and cava, and from the alternate compression and relaxation of the nerves which pass through it.

The greater number of these opinions, however, are now deservedly forgotten; and there can be little doubt that the mechanical effects of ordinary respiration are very inconsiderable.

Dr Bostock gives a faithful account of the discoveries and experiments of philosophers, from the days of Boyle and of Mayow down to the present time: And from these, after many judicious observations, he attempts to determine the changes produced in the air by respiration, the quantities of oxygenous and of azotic gas which disappear, and of carbonic acid gas and of water formed.

Of the knowledge we have hitherto attained of these changes, the following summary is offered.

'1. A quantity of oxygen is consumed in respiration. In ordinary circumstances, atmospheric air, which has been once respired, loses nearly .04 of its bulk of oxygen. In twenty-four hours a man consumes a quantity which will weigh about 2 lib. 8 oz.; somewhat more than 26 cubic feet.

'2. A quantity of carbonic acid is generated by respiration; its volume is less than that of the oxygen absorbed, nearly in the proportion of 37 to 45; the weight of carbonic acid formed in 24 hours is about 3 lib., a volume of about 22 cubic feet.

'3. The whole volume of the air is diminished by respiration: the degree of diminution is not very accurately ascertained, but it may be estimated at about $\frac{1}{50}$ of its bulk.

'4. A quantity of aqueous vapour, the amount of which is still undetermined, is emitted from the lungs.

'5. It is probable that a small portion of azote is absorbed, upon an average about $\frac{1}{100}$ part of the air respired, making, in 24 hours, about 4¼ oz., or 4 cubic feet.

'6. From the ascertained proportion in which the oxygen and pure charcoal exist in carbonic acid, it appears that a greater quantity of oxygen is consumed than is necessary for the formation of the carbonic acid which is produced.'

The change of colour which the blood undergoes in the lungs, early attracted the attention of physiologists. This was at first attributed to the violent agitation which the circulating fluid suffered in its passage through the pulmonary circulation. Some imagined that the blood had parted with somewhat noxious, and others that a certain pabulum was attracted from the air. Lower had proved experimentally, that the bright scarlet colour acquired by the blood in the lungs, was owing to the action of the air: his experiments, however, produced but little conviction, and his doctrine was opposed by Haller.

The experiments of Cigna, of Priestley and others, have now established this fundamental truth, and demonstrated, that the change from the venous to the arterial colour is occasioned by the absorption of the oxygenous part of the air. The theory of Lavoisier and Crawford is fully stated and examined by Dr Bostock. Against this theory the principal objection seems to be, that the blood may be changed from the arterial to the venous state without the addition of carbon, hydrogen, or any new substance, and merely by a different arrangement of its constituent elements; as has been demonstrated by the experiments of Hunter, Fourcroy, and Hassenfratz.

'It became necessary, therefore,' he observes, 'to abandon the theory of respiration, which attributed this change to the absorption of inflammable matter during the aortic circulation, and to form one in which the attraction might be produced by the mutual action of the constituent parts of the blood upon each other.'

Such appears to be the theory proposed by La Grange, which, as modified by Mr Allan, our author thinks, affords an easy explanation of every phenomenon. 'The blood, in its passage through the capillaries of the lungs, absorbs oxygen, which is loosely united to the whole mass of fluid: by this union, its colour is changed from a deep purple to a bright scarlet. The oxidated blood is thus carried along the arteries: in the course of the circulation, the oxygen leaves the whole mass of blood, and forms an intimate union with a part of the hydrogen and carbon contained in it: by this operation it loses its bright colour, and assumes the venous appearance. This portion of hydrogen and of carbon, reduced to the state of an oxide, is then carried along the veins until it arrives at the lungs, where, after being united with an additional quantity of oxygen, it is discharged from the blood, and forms the carbonic acid and aqueous vapour which are found to exist in the air of expiration.'

It was supposed by La Grange and Hassenfratz, as well as by Lavoisier, that the oxygenous part of the air is alone absorbed in the lungs; but the experiments of Mr Davy have rendered it, we think, highly probable that the azotic part is at the same time absorbed, though a much smaller portion of it is retained by the blood. To Dr Bostock, however, it appears more probable 'that the blood exercises its attraction upon the oxygen alone; but that, in consequence of the powerful affinity which a large mass of one of these gases possesses for a small quantity of the other, the oxygen which is absorbed by the blood still retains a minute portion of azote in combination.' But to this ingenious conjecture, founded on the law of affinity pointed out by Berthollet, it may be objected, that the blood appears to have a greater attraction for the atmospheric compound of oxygen and azote than for pure oxygen, inasmuch as more of it is consumed in equal times, during the respiration of common air, than of oxygenous gas.

Dr Bostock having reviewed in succession the opinions which have been entertained with regard to the changes effected in the blood by respiration, thinks that although the subject still remains involved in much obscurity, the present state of our knowledge may be comprised in the following propositions.

1. 'The blood which is expelled from the right ventricle of the heart into the pulmonary artery is of a dull purple colour: during its passsge through the capillaries of the lungs, its colour is converted into a bright scarlet, in which state it is returned to the left auricle of the heart.

2. 'The change of colour is effected by the oxygenous part of the atmospheric air, which is received into the vesicles of the lungs.

3. 'The blood, in passing through the lungs, emits a quantity of carbon, which is expired in combination with oxygen, under the form of carbonic acid gas.

4. 'The blood possesses an attraction for oxygen; and, during its passage along the capillaries of the lungs, it absorbs a quantity of this substance.

5. 'To one of those circumstances, viz. the emission of carbon and the absorption of oxygen, or to the combination of the two, is to be attributed the change from the purple to the scarlet colour, which the blood undergoes during its passage through the lungs.

6. 'The same change of colour is produced, when a portion of the clot of venous blood is exposed to the action of oxygenous gas, and the process is not interrupted by the interposition of a moistened membrane, or a stratum of serum, between the crassamentum and the air.

7. 'When arterial blood is exposed to the azotic, hydrogenous or carbonic acid gases, or placed in the vacuum of an air pump, it assumes the purple hue of venous blood.

8. 'The oxygen, which is, in the first instance, loosely combined with the whole mass of blood during the course of circulation, gradually enters into a more intimate union with a part of its carbon, and forms with it an oxide. When this oxide is brought back to the lungs, it unites with an additional quantity of oxygen, so as to form carbonic acid, and is then removed with the air of expiration.

9. 'The blood receives its supply of carbonaceous matter from the contents of the thoracic duct, which are poured into the left subclavian.

10. 'It has been supposed that, besides the carbon, a quantity of hydrogen is discharged from the blood by the lungs; but this opinion appears to have been adopted without sufficient foundation.

11. 'In consequence of the abstraction of a quantity of carbon from the blood, the proportion of azote in the residuum is augmented: it is also probable that a small quantity of azote is absorbed by the blood immediately from the atmosphere.

12. 'When the blood is converted from the venous to the arterial state, its capacity for heat becomes increased: the specific heats of venous and arterial blood are in the proportions of 10 to 11½.

13. 'The blood, in consequence of its passage through the lungs, appears to have its constituent parts more uniformly mixed together; but this effect is to be attributed merely to the agitation and pressure which it experiences during its course through

the minute and convoluted net-work of vessels which compose the capillaries of the lungs.

14. 'Besides the circumstances which have been enumerated, the arterial differs from the venous, in consequence of the substances separated from it, to form the different secretions; but these changes are not to be attributed to the effects of respiration, and it is absolutely impossible to appreciate their amount.

15. 'A considerable quantity of aqueous vapour is emitted from the blood; but this is the effect of transpiration, and consists of water which had been poured into the blood ready formed, by the thoracic duct, along with the other products of digestion and absorption.'

Our author now brings this volume to a close, by some observations on the respiration of the different gases.

In the first and second parts of his essay, Dr Bostock has performed the office only of a well informed and faithful historian. The third part, in which he proposes to treat of the different affections of respiration, will consist chiefly of original experiments and observations; but these, he informs us, are still in too imperfect a state to meet the public eye. We are happy, however, to learn, that his experiments have already furnished him with some interesting results; and hope he will soon be enabled to complete his plan, for which, from the specimen already given, he appears so eminently qualified.

II.

A Dissertation on Gout; exhibiting a New View of the Origin, Nature, Cause, Cure, and Prevention of that afflicting Disease; Illustrated and Confirmed by a variety of Original and Communicated Cases. By ROBERT KINGLAKE, M.D., &c. Physician at Tauntoun. 8vo. pp. 348. London. 1804.

We have so long been conscious of the impotence of medicine in the ordinary treatment of gout, and have felt so much reluctance in being compelled to confess it, by repeating the empty sounds of 'flannel and patience,' that we are disposed to listen with pleasure to the proposal of any practice, which may be attended with something more than negative advantage. It is true indeed, that, from the age of Sydenham to the present time, a host of authorities may be adduced in favour of this temporizing system, and in proof of the deleterious effects of all active remedies; and it will be naturally inferred, that this notion was the result of careful induction from an ample series of facts. When we recollect, however, the tendency of the human mind to adopt implicitly, and without examination, the prejudices of early instruction, as well as the numerous unfounded errors which have thus been propagated from age to age, sanctioned by great names, and bearing the semblance of experience, we are apt to question the infallibility of authority, and to listen with deference to every rational proposition. A liberal discussion, which excites to investigation on the one hand, and to a revision of facts on the other, if it fail to correct established error, will tend at least to the corroboration of truth.

We entered with alacrity, therefore, on the perusal of Dr Kinglake's dissertation, in which the speedy removal of the local inflammation of gout is recommended to be attempted by the use of cold applications, in the same manner as in other topical inflammatory diseases. And it must be observed, that, however powerful and general authority may be, in testimony of the danger of such an expedient, it cannot be more strong nor more dictatorial, than it was a few years ago, in condemnation of the slightest attempt to introduce the external use of cold water in general fever. Yet experience now justifies us in ranking this practice, in its application to Typhus and Scarlatina, among the most important improvements in medicine, which the present age has produced; and its signal success induces a hope, that the further study of morbid temperature, whether in local or general affections, will contribute to augment the efficacy, and to extend the utility of our art.

Analogy, however, and reasoning *à priori*, are confessedly not sufficient to counterbalance the evidence of long experience. It was incumbent, therefore, on Dr Kinglake, either to diminish the force of the latter, by proving the existence or the source of some fallacy; or to add such a weight of testimony, deduced from experiment, to the lighter scale of analogy, as might determine the balance in its favour. And had he been contented to bring forward that portion of his work which constitutes the Appendix, and contains a copious collection of testimony in favour of the new practice, he would have gone far, we believe, to establish his position, and could not have failed to shake the prejudices of the most inveterate advocates for received opinions. But the effect of that testimony is considerably diminished by the systematic treatise which precedes it. For, in the first place, we are put on our guard against the implicit reception of the facts, when we are informed that they are the result peculiar structure of the parts in which it is seated. (*vide* p. 10. *et seq.*) He adopts the axiom laid down in Newton's Principia, that 'causes acting in similar circumstances must produce similar effects;' and illustrates the general fact, by stating that the physical act of vomiting is the same, whether induced by tartarized antimony or ipecacuanha. Mechanical illustration, however, is in few cases applicable to the phenomena of life, and has unfortunately too much retarded the investigations of pathology; whilst the too speedy generalization of these phenomena has lately contributed to the same effect. The Newtonian rule is, in consequence of this generalization, erroneously applied, and therefore advanced in sanction of erroneous conclusions. It may, in the present instance, be collected by the most obvious implication, even from Dr Kinglake's own words, that the circumstances are not in all cases similar. 'Sprain,' he observes (p. 16.), repeatedly occurring on the same ligaments and tendons, will at once render them additionally liable to *inflammatory extension* from external accident, and to *gouty irritation* from the usual causes, with all its *morbid sympathies* with other joints.' Again—'Ligamentous excitability, stimulated to the extent of inflammatory action, may assume different forms, but changes not its fundamental nature. In the lumbago or disease of the lumbar vertebral ligaments, the sciatica, or hip-gout, the white swelling or ligamentous inflammation and thickening of the knee and other joints, are various examples of inflammatory excitement, of the same structure as that which is the seat of gouty irritation; and these acknowledge no other difference than what consists in degree and situation.' *Ibid.* But the seat is the same:—white swelling and gout, then, are only different degrees of the same complaint! Thus, one circumstance common to all, viz. excitement, is alone attended to; and all the minute peculiarities of appearance, relative connexion, and consequence, are overlooked. Upon the same principle it may be affirmed, that inflammation of the skin differs only in the degree of excitement, whatever denomination we may give to those degrees; whether one be called *erysipelas*, another *scarlatina*, *variola*, *varicella*, *rubeola*, *lepra*, *herpes*, &c. But it would be injudicious, we apprehend, to regard the excitement alone, unmindful of the peculiar consequences of each modification, and the 'morbid sympathies' by which it is connected with other parts of the system. The existence of these sympathies, and the expectation of these consequences, are sufficient to warrant an attention to *practical* varieties of treatment, did not the specific differences in the contagion or other causes, as well as of appearances, evince a difference in *kind* where the seat of the diseases is the same. It is scarcely necessary to remind Dr Kinglake, that similar differences may be traced between gout, rheumatism, white swelling, and sprains. The obscure and internal causes, the morbid sympathies, the periodic returns, the deposition of urate of soda, are peculiar to the first. The external evident cause, the muscular seat of the pains, the effusion, if any, of coagulable lymph, mark the second. The slow and imperfect suppuration of scrofula is sufficient to designate the third. And the absence of all these peculiarities, as well as its mechanical cause, will discriminate the last.

While we thus, however, condemn that hasty generalization which precludes an attention to particular circumstances, we are ready to concede to the author, that too much attention has been often employed in detecting differences of trivial practical importance. We are also willing to admit, that the degree of excitement is the great and fundamental fact, by which our practical views are to be principally directed, whatever may be the specific origin or constitution of a disease; and that this truth, which may be deemed one of the most valuable suggestions of the Brunonian theory, has not been sufficiently appreciated, nor duly applied in practice. All that we are disposed to contend for is, that there are peculiar circumstances which occasionally demand our practical observation, and that an attention to the excitement ought not to supersede a consideration of the morbid sympathies and consequences of diseases. By removing a painful, but temporary, excitement in the foot, we may possibly (if Sydenham and Cullen are to be believed) excite, by sympathy, a fatal disease in the stomach; and it matters not by what name we agree to call the latter. It were idle indeed to say, 'that the sympathy will not have transferred either ligament or tendon to the stomach, and of course cannot have endued it with the physical possibility even of being affected with gouty inflammation.' (p. 62.) We are not contending for the name, but for the fact: and to this point, we repeat, Dr Kinglake should, in our opinion, have directed his observation more precisely. Had he shown in what circumstances such retrocession or morbid sympathy is to be apprehended, and how it might be obviated; or proved that it is a mere bugbear of medical speculation, and explained why its occurrence has been falsely imagined to be frequent: had he pointed out any source of error, or openly met and controverted the fact, he must have gone far to extort our conviction. But, even in his valuable appendix, the attention is not directed sufficiently to these points, and the circumstances of the patients, by which they might be elucidated, are not detailed with sufficient discrimination, to enable us to collect a satisfactory conclusion. They are sufficient, however, to excite some degree of scepticism in regard to the received opinion.

In the following section the author treats of the proximate cause—the essential part of the new theory, by which the new practice was originally suggested. Its novelty we shall not dispute. We give the doctrine to our readers in the author's own words.

'The proximate cause of gout results from the aggregate efficiency of the remote causes, and is truly the disease itself. This efficiency or proximate cause, by which the disease is constituted, consists in *an agitated and increased degree of vital or repulsive motion in the affected parts.*

'By vital motion is meant a repellency, subsisting between the constituent particles of all matter. This innate power or property is, by a law of nature, spontaneously evolved from atomical surfaces, and assumes character and determinal force, when issuing from the congeries, or combination of material substances, which forms specific or particular structure.

'The exertion of this universally repellent power, in the organic fabric of the animal economy, is life, or vital motion. The action of this power denotes itself in animal feeling, as heat: An undistinguishable identity, therefore, with respect to the object, subsists between what has been variously denominated repulsive motion, vital action, and heat.' (p. 76.)

On the perusal of this luminous theory, we turned almost involuntarily to the author's preface, to ascertain whether he dated from St Luke's, or the wing for Incurables in Moorfields. If any one of our readers can solve this enigmatical hypothesis, we will hail him as a Magnus Apollo. For our own parts, we have endeavoured in vain, unaided by the oracle, to develop the mystery. Perhaps the following may be something like an epitome of it. 'Gout consists in an agitated degree of life (or vital motion), or in an agitated degree of repellency, or in an agitated degree of heat in the affected parts! For repulsive motion, vital action, and heat, are identically the same.'

Hence, Dr Kinglake considers that *it will be easy to perceive* that 'the real cause of all the distressing torture occurring in inflammatory gout, consists in almost *a combustive degree of redundant heat*, or repulsive motion,' (p. 77.): and hence, we must allow the suggestion of cold water, by which the combustion might be extinguished, would very naturally occur.

We shall not pretend to offer any comment upon speculations which elude our intellectual powers. Had the author simply stated, that the reduction of temperature in phlegmonous inflammation was known to be efficacious in removing the disease; that, by analogy, he conceived the propriety of extending the principle to gouty inflammation; and, lastly, that experiment had confirmed the rectitude of his conception; we should have at once accorded with him in a generalization equally philosophical and important. And, in truth, this is the only intelligible construction which we can put upon his theory. We shall proceed, therefore, to examine briefly the practical inferences, and the facts which he has adduced, recollecting the admonition of Celsus;—Ne inter initia quidem ab istis quæstionibus deductam esse medicinam, sed ab experimentis.'

In sect. IV. Dr Kinglake states, that the great indication in the cure of gout, is to diminish the general and local heat. And, for this purpose, he recommends diluents and spare diet, and, above all, the application of *cold water* to the inflamed parts.

'It should be applied topically to the affected parts, either by means of wetted cloths, by gentle showering, or by actual immersion. A durable degree of cold must be supported; the refrigerant force, therefore, of its first application, must be uniformly continued, by frequently renewing the cold water, which soon becomes heated by the inflammatory temperature of the affected parts. This course should be pursued until the painful sensation of burning heat shall subside, and with it the concomitant efflorescence and tumefaction.' p. 83.

'Both the local and general mode of reducing morbid heat, here recommended, must be understood to be as strictly applicable to every shifting or sympathetic attack on a fresh joint, as to the original seizure.' p. 87.

'Reduced temperature, adequately applied, will, in a vast majority of instances, effectually remedy every grievance, and leave nothing for medicinal assistance to accomplish.' p. 89.

But, in some cases, which he does not sufficiently specify, he has been accumtomed to prescribe camphorated tincture of opium, and volatile tincture of guaiacum in considerable doses every four hours. These, we presume, were cases of old gout, accompanied with debility, and in which the viscera were likely to suffer by 'sympathetic association.' He remarks, that opium is often efficacious in alleviating the pain, if used in conjunction with the refrigerant plan, when it had failed altogether to produce this salutary effect previously. This important fact is perfectly analogous with what we know of the effects of opium in the different states of excitement in other diseases.

After the inflammation has subsided, he recommends friction, gentle motion, and warmth of the part.

By this treatment, he affirms, the parts usually affected are not allowed to become distorted and crippled, and to deposit tophous concretions; and the general state of the constitution is preserved from that irremediable injury, which is occasioned by the irritation of protracted gout.

If the general experience shall confirm this statement; if these important objects are attainable with safety and facility, and a valuable portion of mankind be thus enabled to ward off a most severe and continually increasing disease, Dr Kinglake will be justly entitled to be ranked among the benefactors of society.

In the appendix, about 30 cases of gout are detailed, and several others mentioned, in which the application was invariably and speedily successful in relieving and curing the disease. In some of the cases, the disease had been of long standing, and the constitution considerably undermined; in one it existed in combination with asthma. Yet the much dreaded repulsion did not take place; but, on the contrary, the relief was great and sudden. Eight or ten of these cases are related by Dr Kinglake himself; the remainder, by various practitioners, who having preconceived no theory, cannot be suspected of self-deception.

The extension of the general fact to the treatment of acute rheumatism, is also a matter of great importance. Ten cases of that disease are also detailed in the appendix, in which the external application of cold water proved a speedy and effectual remedy. This disease, under the common modes of treatment, is productive of much misery; and although we are satisfied of the advantages of a free exhibition of opium with diluents, and of proscribing blood-letting, if more extended experience shall coincide with that adduced by Dr Kinglake, the refrigerant will supersede all the variety of practice hitherto adopted. The evidence here stated is such, that it certainly authorizes a fair but cautious trial.

We have said nothing on the subject of the *prevention* of gout, on which Dr Kinglake has written a very excellent section, detailing, in a perspicuous and sensible manner, the measures by which that object may, in young subjects at least, be accomplished; because his 'view' of the matter is in no degree 'new.' All that he has adduced has already been given us by Sydenham and Cullen; and the principal part even by Celsus. And Dr Kinglake may perhaps remember, that his doctrine has long been illustrated, both by precept and example, by the present distinguished professor of the practice of medicine in the University of Edinburgh. In addition to temperance and exercise, and warm clothing, Dr K. recommends that the feet, as well as the hands, be washed in cold water every morning.

We cannot conclude, without entering our protest against such an abuse of language as the style of this dissertation displays. Every word is *sesquipedalian*; and the whole is a mongrel of English and

Roman breed, which betrays a greatly vitiated taste, and contributes to produce perpetual obscurity. Our powers of comprehension have been upon the stretch from beginning to end. When we read of 'distempered excitability on the fascial parts, inducing morbid changes, which becomes so radically influential in the motive powers of the system, as to generate a transmittable state of temperamental susceptibility for morbid affection,' p. 49, we are almost compelled to exclaim with the boor in the farce, 'Anan, Sir, I don't understand *Latin*:' for, in good truth, it bears very little resemblance to our vernacular tongue.

Free as we have been in our condemnations of the theoretical part, and of the pompous obscurity of the style of this dissertation, we have perused the detail of facts with great pleasure, and not without advantage. They appear to us to open new and important views of the nature of many diseases, and of the attention which we shall ultimately, perhaps, be induced, in all instances, to pay to morbid sensation, and the instinctive demands of nature. A refutation of the idea of danger from repulsion being once established in respect to gout, it will be considered *instar omnium*, as leading to an extension of the refrigerant practice to other diseases, such as erysipelas, &c. in which we are at present little more than harmless spectators. But some reverence for authority, and much caution, will still be due from us. And we should have acknowledged still greater obligations to Dr Kinglake, had he, like his distinguished predecessor in the study of morbid temperature, Dr Currie, not at once denied the existence of the danger which is commonly apprehended, but shown us, from a careful and intelligent induction, the circumstances on which it depends, or has been suspected to depend, and also those which may guide us to avoid it.

III.

An Account of Two Cases of Gout, which terminated in Death, in consequence of the External Use of Ice and Cold Water. By A. EDLIN. 12mo. pp. 24. Uxbridge.

THIS pamphlet contains, in fact, but one case upon the authority of Mr Edlin's personal experience; for the second, which is mentioned in a note, is merely given from the recollection of two old women, and occurred thirty years ago. In the former, the cold application was speedily and effectually beneficial; for it entirely removed the pain in less than three hours. But palpitation, vomiting, and a sensation of coldness in the stomach, with intermitting pulse, difficult respiration and coldness of the extremities, are said to have supervened in a few hours; and having recurred once in the interval of a week, a third attack then proved fatal.

This case is related with little or no discrimination: The state of the patient's constitution, the previous number of attacks, &c. are not mentioned. And as Mr Edlin laboured under so severe a paroxysm of prejudice, as to be 'almost petrified with horror' at the sight of the 'rash' practice, a single case, which in no instance can prove much, in this must be deemed of very little weight. It seems, indeed, to be one example of what is commonly understood by repelled gout; but anomalous attacks of the viscera are very frequent in irritable constitutions, independent of gout, or its suppression. Unless, therefore, we are in possession of an accurate statement of all the concomitant circumstances, such cases will serve to make us more cautious; but they will not warrant a sweeping conclusion, that any particular cause excited the symptoms in question.

IV.

A Reply to Mr Edlin's Two Cases of Gout, &c. To which is added, An instance of the Fatal Effects of Encouraged Gout; with Observations, Cautions, &c. By Robert Kinglake, M.D. &c. 8vo. pp. 61. Taunton, 1804.

Dr Kinglake replies to Mr Edlin with some asperity; but his answer is extremely satisfactory. In addition to the observations which occurred to us on the perusal of Mr Edlin's pamphlet, he remarks, that 'the narrative recounts a selected, partial, and inconclusive group of symptoms,' which are by no means those of repelled gout, as it is usually described. No complaint is made of *pain*; and Dr Kinglake considers it rather as approaching to an attack of syncope. He, in his turn, intimates a probability, that the over-stimulant remedies which were administered, might be more instrumental in hastening the fatal event, than the cold application previously employed; but, in our opinion, very unjustly. It is an imputation which could only arise from the error which Dr Kinglake has fallen into, of considering the affection, which takes place in the viscera in consequence of repelled gout, as *inflammatory*.

Dr Kinglake adds, that the refrigerant treatment is rapidly gaining ground in the neighbourhood of Taunton; and that he is already in possession of a considerable addition to his stock of cases in its favour, from correspondents in different parts of the kingdom, which he shortly intends to publish.

V.

Observationes et Epicrisis de Corticis Peruviani salutari et proficuo usu in Podagra. A Francisco Tavares, Archiatro Lusitanico, &c. 12mo. Olisiponæ. 1802.

This little work also relates to the discovery of a cure for the gout, or rather the renewal and confirmation of a neglected remedy. Sydenham conjectured that Cinchona would be found useful in this disease; and Held ascertained by experience the truth of his conjecture. Notwithstanding these authorities, however, regular practitioners seldom if ever prescribe it, deterred, most probably, by its partial analogy to bitters, the fatal consequences of which are too well known. But, after eight years experience, Dr Tavares recommends it not only as a certain, but as a perfectly safe remedy. He was induced to try it, not from any preconceived theory, but in consequence of an accidental observation of its successful employment, by an ignorant and empirical barber-surgeon.

Professor De Lemos, who had been the author's pupil, was called, in 1793, to a monk in extreme agony from a paroxysm of gout. He prescribed, as usual, patience and attention to diet; but his advice was rejected by the monk, who found more consolation in the promises of a surgeon to cure him speedily. His plan of treatment was to give first a purgative, consisting of half a drachm of resin of jalap, as much scammony, and half an ounce of syrup of poppies; and afterwards to exhibit half a drachm of cinchona every hour. As the patient was cautioned against the violence of the purgative, it is not known how much of it he swallowed; but, in twenty-four hours, he took two ounces of cinchona in powder; and when the Professor returned, expecting to find him much worse, to his astonishment, he was walking with the help of a stick; and in two days more, he was able to go abroad.

The observation of this fact naturally led Professor De Lemos to make further trials of this treatment, only substituting sulphate of magnesia for the drastic purgative. He found it uniformly successful, and his experience of its excellent effects was fully confirmed by our author, to whom he communicated it. Seven cases are related in this pamphlet; two of which were treated by Professor De Lemos, and five by Dr Tavares, whose own case, for he was a martyr to hereditary gout, is circumstantially detailed. In all of these it not only seemed to cut short the paroxysms, but to render them less frequent; and in no instance does it appear to have been attended with any bad consequences.

In the second part, Dr Tavares endeavours to show that the use of Peruvian bark in gout is recommended both by facts and analogy. In addition to his own experience, and that of Professor De Lemos, he has only adduced that of Dr Godfrey Held, recorded in the Ephem. Nat. Curios. Cent. 3. & 4. Obs. 170, and which is summed up in these words—'Uno verbo, cortex Peruvianus in podagra *divinum est remedium*, quod multijuga experientia edoctus certò et firmissimè asseverare non nequeo.' His analogical reasons for its use, are the analogy between gout and other diseases, in which the good effects of cinchona are ascertained, and the analogy between the properties of cinchona and of those substances which are thought of the greatest service in gout.

On the whole, this little work of Dr Tavares gives a very favourable idea of the state of medical science in Portugal; and the facts which he has adduced are certainly sufficient to warrant a fair trial to cinchona in this disease, hitherto classed as an *opprobrium medicorum*.

VI.

Traité des Maladies Goutteuses. Par P. J. Barthez, Médécin du Gouvernement Français, &c. &c. 2 tomes, 8vo. Paris. An X.

The object of the publications which we have just noticed, is to establish the true value of certain remedies proposed for the cure of gout. That of the work before us is much more extensive, as it embraces the history of all the varieties of gouty and rheumatic affections, the most rational opinions respecting their nature and causes, and the investigation of the best methods of treatment. It is impossible at present to attempt a detailed account of a work of so comprehensive a plan, especially as its merit consists rather in judicious compilation, than in remarkable originality.

His theory of the disease seems indeed curious; but, from not having been able to procure his *Nouveaux Elemens de la Science de l'Homme*, to which we are referred, we cannot judge of the truth of the principles on which it is founded. 'L'etat goutteux des

solides,' says he, 'est une affection speciale, qui survient à des états vicieux ou de constriction ou de relachement dont ils peuvent être affectés, et qui donne à l'un et à l'autre une permanence singulière. Il me paroit extremement vraisemblable que cet etat goutteux des solides est produit par l'action de la force de *situation fixe* entre les parties du tissu des fibres; force dont j'ai le premier connu et demontré l'existence dans les muscles et les tendons, et qui peut être supposée exister dans les autres organes mous.' The only information regarding the nature of this force of *situation fixe*, is contained in a note, in which we are told, that 'the vital principle is capable of acting on the substance of the muscular and tendinous fibres, by a different force from that by which it produces contraction; so that it fixes the parts in a determinate relative situation, and prevents them from being separated by powers very superior to the physical cohesion of these fibres.' As he does not at all show how this theory explains the phenomena or cure of this disease, it must be regarded as a mere hypothesis, and would not have deserved notice, if it had not been the principal novelty in the work.

As a compiler, however, the abilities of Dr Barthez are highly respectable. Everywhere are evinced marks of great research and sound judgment. Let us take as an example, and as connected with Dr Kinglake's practice, what he has said of the use of cold water in this disease. The use of cold water as a drink, he represents as of acknowledged efficacy in allaying the violent pains of a fit of gout, as well as in moderating the thirst and heat, which are sometimes insupportable. Rondelet seems to have been the first to consider this treatment as of specific utility in this disease. Vander Heyde says, that there is no remedy more powerful in preventing an attack, or curing it after it has commenced. Although our author thinks this eulogium exaggerated, he has himself often experienced the best effects from this remedy, and is of opinion that Vogel has with justice recommended it. However, there are limitations to the use of cold water as a drink in this disease, which have not been sufficiently determined. When the thirst and fever are strong, he thinks it may suddenly check the salutary efforts of nature; which has induced Musgrave to say, too generally, that it is always rash and dangerous.

Hippocrates says, that cold water, freely poured upon gouty swellings of the joints, allays the pain, by producing a moderate degree of numbness.

Galen has confirmed this opinion; but, from the principles of this practice not having been determined, it has been too generally condemned by some, as De Gorter, and recommended by others, as Cocchi. Our author therefore endeavours to supply this defect; but we think without success. The following facts are more important.—Loubet, in a paroxysm of gout, having his feet affected with erysipelas, was induced, by the agony he suffered, to immerse his feet and legs in cold water, until it became temperate. After having dried them, he went to bed, and slept soundly. On awaking, he continued to perspire profusely for more than fifteen hours, when he found himself relieved; and next day walked without any pain. Pechlin relates, that he knew a gouty man, who got rid of his pains by rubbing his feet with snow, and afterwards walking on the snow. Musgrave has also observed, that the immersion of the feet in cold water, although very often pernicious in a fit of gout, in several individuals had the effect of speedily removing it.

As a preventive of gout, the external application of cold water has been long recommended. The waters of the Cydnus, which are remarkably cold, are celebrated in Strabo for their good effects in gout, and the ligamentous swellings of domestic animals. Pliny also quotes a letter of Cassius of Parma to Mark Antony, on the use of the waters of the Cydnus in gout. Antonius Musa cured Augustus of extreme emaciation, the consequence of gout, by cold bathing and cold drink. Stoll advises the body to be sponged every morning with cold water. Grant says, that walking in cold water is the most useful of all exercises. And Williams recommends immersion for about half a minute in cold water, succeeded by friction and exercise, for the radical cure of gout. ‘Upon the whole,’ says our author, ‘it is impossible to deny the good effects which immersion for a short time in cold water, succeeded by moderate exercise, has in exciting the powers of the constitution in many individuals subject to gout; provided,’ he catiously adds, ‘this immersion be employed in favourable circumstances, and combined with an appropriate strengthening diet.’

VII.

An Improved Method of treating Strictures in the Urethra. By Thomas Whately, Member of the Royal College of Surgeons in London. 8vo. London, 1804.

Mr Whately claims the merit of having opposed, what he deems, the dangerous practice of Mr Home; and though his observations on that practice have been for some time before the public, it does not appear that they have procured him the expected honour of a reply from his adversary, who, equally convinced of the safety and efficacy of his method, continues to wield his formidable bougie, and to inform the world of his uninterrupted victories.

Mr Whately, too, has mounted his hobby. He started, it seems, a friend to the lunar caustic; but he was determined to improve, or at least to add something new to the practice, which he did by coating the extremity of the bougie with the $\frac{1}{12}$ or $\frac{1}{16}$ part of a grain of powdered caustic mixed up with thick mucilage of gum arabic; and this appears to have answered his purpose very well, till he had the good fortune 'to discover a more efficacious, and at the same time a less painful and hazardous remedy for the disease in question;' in a word, to substitute one caustic for another, the kali purum for the lunar caustic. The pretensions of this innovation are indeed very high; but those who are aware of the fond partiality of discoverers and improvers for their own offspring, and who know that innovation does not always imply improvement, will have their doubts, and, till more general experience have pronounced judgment, will be disposed to question the principles on which the practice of Mr Whately is founded.

The *modus operandi* of Mr Home's bougie is clear and intelligible, and its good as well as bad effects are easily deduced from its powers. As a caustic applied to a sensible and vascular membrane, it must occasion pain, and sometimes hæmorrhagy, and, while it destroys the stricture, it must produce a slough. The simple bougie cures by dilating the stricture, the caustic by destroying it; and the pain and slough are the necessary effects of its operation, hæmorrhagy sometimes an accessary one. But though these effects are implied in the destruction of a part by caustic, we believe that, in this particular instance, they have been magnified somewhat beyond the truth. The pain is less and of shorter duration than might have been expected: the sloughing is generally trifling, sometimes altogether unobserved: the hæmorrhagy, sometimes indeed profuse, is yet an accident which has followed the slightest violence done to the diseased urethra by the most simple bougie. Alarming consequences indeed may have been observed from a rash, injudicious, or unskilful application of the armed bougie; but what active remedy is safe in the hands of ignorance or temerity? The lunar caustic, however, is here represented as fraught with unavoidable danger, from the horrid pain, sloughing, and profuse hæmorrhagies, not to mention the false passages and breaches made in the urethra, and which, by the by, have been formed by the simple as well as by the armed bougie. But the *kali purum*, employed à la Whately, is free from all these accidents; and while, in point of efficacy, it is asserted to be superior to all other methods, it gives but little pain, and is followed neither by slough nor hæmorrhagy!

Our readers, who are not acquainted with the method of applying the kali purum, will be disposed to wonder at the singular efficacy and mild operation of a caustic, which, from their knowledge of its deliquescent and unmanageable nature, they would have condemned unheard, or considered at least as far more dangerous than the nitrat of silver in the treatment of strictures in the urethra. It is necessary, therefore, to give some account of Mr Whately's bougie, and of his manner of employing it.—' A bougie being chosen just large enough to enter the strictured part, a small hole, about the sixteenth part of an inch deep, is made at the extremity of its rounded end, by means of a blanket pin; a piece of kali purum, less than half the size of the smallest pin's head, is then introduced, and sunk a little below the margin of this hole, which, to prevent the escape of the kali, is afterwards a little contracted by the fingers, and then filled up with hog's lard, to prevent the caustic from acting on the sound part of the urethra, as the bougie passes to the stricture.

' Let the bougie be oiled when it is completely prepared for the office it has to perform. Then let the operator, without delay, pass it by a very gentle motion, with the curvature upwards, to the anterior part of the stricture, upon which the caustic is to be applied. In doing this, the end of the bougie that is held by the finger and thumb should be a good deal inclined towards the abdomen, on its first introduction into the urethra, in order to preserve the curvature of the bougie. After it has passed about five inches, this end should be brought gradually downwards, as the bougie passes on, till it forms a right angle with the body. It will be known when the bougie arrives at the stricture by the resistance to its progress felt by the hand of the operator.

' When the bougie has reached the anterior part of the stricture, it should rest there for a few seconds, that the caustic may begin to dissolve. It should then be pushed very gently forward, about one eighth of an inch; after which there should be another pause for a second or two. The bougie should then be carried forward in the same gentle manner, till it has got through the stricture. The sense of feeling will generally inform the operator when it has proceeded so far.

' When the caustic bougie has passed through a stricture, it should be immediately withdrawn, by a very gentle motion, to the part at which it was first made to rest a while; after which, it should be passed very slowly through the stricture a second time, but without letting the bougie stop in its passage. If the patient complain of pain, or if he be faint, which last effect sometimes, though rarely, attends the first operation, the bougie should be immediately withdrawn; but if these effects are not produced, we may repeat the operation of passing and withdrawing the bougie through the stricture once or twice more before we finish the operation, which will take up in the whole about two minutes.

'At the expiration of seven days, the application of the caustic should be repeated in the same manner. If the first application should have enlarged the aperture of the stricture, which may be known by passing a bougie through it, of the same size as that by which the caustic was conveyed, the bougie used in the second operation should be a size larger than the one used in the first, taking care, however, that this be not too large to pass through the stricture.'

We have thus quoted as much of Mr Whately's description as may enable our readers to understand the construction and application of his bougie. At the end of seven days more, he directs a third application to be made, and so on, gradually enlarging the bougie as the stricture dilates. The quantity of caustic also may be occasionally increased; and to prevent misapprehension, the quantities to be used are represented by three dots of different sizes, thus, • . ,—twelve of the largest of which weigh one grain.

It may now be asked, how these minute portions of potass, secretly enclosed in the extremity of the bougie, are supposed to act upon the stricture? If as a caustic, it will be difficult to assign the peculiar advantages of the innovation. But the object of Mr Whately is very different: The intention of his practice is to render the *kali purum* safe and mild, so that, as when properly diluted it may be received into the stomach without danger, it may be applied also to the strictured urethra without producing slough, considerable hæmorrhagy, or the other accidents which follow the application of the nitrat of silver. But we shall here venture one general remark with regard to the use of caustic,—If its operation can be confined to the part intended to be destroyed, the more active the caustic is, the better; the irritation and risk will be less in proportion to its activity. If the caustic is sufficiently powerful to destroy the part to which it is applied, its action is limited to that part; if less powerful, it irritates, stimulates, and inflames to an unassignable extent, and increases the symptoms it was intended to relieve. Our object, therefore, in the application of caustic, is not to diminish its power, but to limit and confine its action. The kali purum, however, Mr Whately conceives to be slowly dissolved, to form a sort of animal soap, which being diffused by the bougie over every part of the stricture, *abrades* the obstructing membrane without producing a slough. Thus, by its property of combining with oily substances and animal mucilages, and forming a soap, the kali purum, he assures us, is greatly superior to the lunar caustic; it acts more powerfully on the stricture, gives less pain, is more capable of having its action confined to the contracted part, and irritates less after it has been applied. To us, these advantages seem in a great degree irreconcileable. Far from being satisfied with this theory of chemical filing and abrasion of the strictured part, we still suspect, that whatever tends to weaken the action of the caustic, will at the same time destroy or lessen its effects on the stricture. If Mr Whately's statement be accurate, we would consider his bougie as differing little from the most simple, which operates by dilating, and perhaps by promoting the absorption of the strictured surface: It is a medicated bougie, which would be better and safer, without the quackery of the animal soap. Surely, if Mr Whately's bougie gives so little sense of burning and of pain, if it occasions no slough or hæmorrhagy, it cannot be said to destroy the stricture as a caustic: If its use is never followed by rigors, by intermittent paroxysms, by delirium, &c. it is indeed free from consequences which we would devoutly wish to avoid, but which have been excited by the simplest bougies, as well as by the caustic of Mr Home. But if Mr Whately's bougie possess the powers of a caustic, if as such it be capable of destroying the stricture, we cannot conceive how its action should be more confined to the strictured part than the armed bougie of Mr Home. From the way in which this last bougie is armed, the caustic is made to act directly on the anterior part of the stricture: If properly applied, its action is confined to that part, and no other part of the urethra is injured, either in introducing or withdrawing it. But Mr Whately's bougie is passed within and beyond the stricture, on the sides and whole surface of which it is intended to act. The caustic, indeed, is curiously concealed in its extremity, and therefore cannot produce any effect on its first introduction; but being passed within the stricture, where the caustic is supposed to dissolve, and to distil from the pin-hole in the extremity of the bougie, which is now moved upwards and downwards, the liquid caustic is applied by the shoulders and circumference of the instrument to the sides of the strictured part. Now, in this way, the lower part of the bougie, to the extent at least of the motion given, will be imbued with the caustic solution, so that it must be impossible to confine it to the stricture during the operation; and in withdrawing the bougie, the whole membrane of the urethra will be exposed to injury.

But, granting every other advantage to Mr Whately's method, it is evident, and indeed it appears from his own account, that the kali purum is not so extensively applicable as the lunar caustic; that its use is limited to those cases of stricture which admit the bougie to be passed through them, and which, for the most part, will yield to the unarmed bougie itself; while the lunar caustic is preferred in the more complicated cases, where the stricture can be attacked on the anterior surface only; that is, in all those cases which do not so readily yield to the milder method of dilatation by the simple bougie, and which perhaps alone demand the more hazardous treatment by the caustic. And here, we would enter our protest against that general and indiscriminate use of caustic in the treatment of strictures in the urethra, which has been adopted by some surgeons, and recommended to the imitation of others. We would remind those, that by far the greater number of cases of stricture may be subdued by the simple bougie; that it continues to maintain its reputation with the best surgeons; and that, in spite of the quackery of the times, and the clamours of interested faction, it must still be considered, not only as the safest remedy in this disease, but as one of great efficacy, and as the best adapted for general practice. It should always be had recourse to in the first instance. The bougie, armed with caustic, should be kept as a remedy of reserve, to be employed in those more difficult and complicated cases, in which the former has failed, or to which it is inapplicable.

Mr Home, we may observe, in displaying the advantages of the caustic, has not concealed its dangers; and, in the history of his cases, he has not omitted the accidents which occurred, and embarrassed, or interrupted the cure. These were to be expected; but it is from the average success of the practice that he *has* drawn his general conclusions. These accidents, however, form the great objections which are urged against his method by Mr Whately. One general result, indeed, of great importance, is challenged by Mr Whately. Mr Home assures us, 'that the parts recover themselves after the use of the caustic, and acquire the natural smooth surface they originally possessed in common with the rest of the urethra:'—'That removing the stricture restores the parts to all their natural functions.'

Mr Whately maintains the very contrary of this assertion. 'There is,' he tells us, 'another serious effect of Mr Home's mode of treating strictures, which is but little known, except to the individuals who have been under this treatment. What I here refer to is, that the caustic, when repeatedly applied to the same stricture, does irreparable mischief to the contiguous part of the urethra. Whether the bougie be eventually passed through the stricture, or whether the surgeon, at length despairing of success, desist from any further attempt, the subsequent effect is nearly the same; the inner membrane of the urethra being repeatedly injured, fresh contractions frequently take place in a short time after the caustic is left off, and the parts are cicatrized and left to themselves; which being generally of an irregular kind, the strictured part degenerates into a worse state than ever. I have had opportunities of observing the effects of this mode of treatment in many of Mr Home's patients; and I can truly say, that I have met with no cases so obstinate and unmanageable as these: Several of them I have found to be incurable; as either no passage could be procured for the bougie into the bladder, or, if passed, yet the stricture proved so rigid, that it could not be dilated.'

If Mr Whately's conclusion be the true one, it would prove an irrefragable objection to the use of the caustic. Mr Home's practice in this disease is very great; he has a reputation to support, a character he would not surely endanger by the public assertion of what every one of his numerous patients might so easily contradict: and we think it becomes him to examine, and to expose the grounds of Mr Whately's allegation.

Though the professed purposes of Mr Whately's publication be, to expose the dangers of Mr Home's practice, and to recommend his own method to the imitation of surgeons, he has taken occasion to offer a few general remarks on the nature of strictures, and to give some judicious directions for the introduction and management of bougies. Instead of introducing the bougie in the usual manner, he particularly recommends that it be bent and adapted to the curvature of the urethra, by which its passage is greatly facilitated.

The cases, which are added, of strictures cured by the kali purum, convey little more information than what is asserted by Mr Whately in the text, of the efficacy and mild operation of the caustic. They are so uncircumstantially related, and so much resemble each other in the few details which are given, that any one might stand for the whole.

These cases, however, Mr Whately thinks, clearly show the surprising effects of caustic in this disease, and its perfect safety when administered with judgment. He is particularly anxious that these reports be compared with those published by Mr Home. —' The greater number of his cases are filled with accounts of the violent and dreadful effects of his method of treatment, not merely on the urethra itself, but on the system in general. These cases, on the contrary, show the genuine effect of a powerful remedy, applied in a suitable quantity, and at proper periods, to the diseased surface of a stricture; which, like all other remedies of great efficacy, when thus employed in many other diseases, tends to abate and moderate their symptoms, rather than produce fresh ones, or increase those from which the patient already suffers.'

The cure, he assures us, has been permanent in all these cases; and so little pain or inconveniency was generally felt from the kali purum applied in his way, that he does not recollect a single instance of a patient being confined, even for a day, in consequence of its application. The patient, in almost every case, went abroad as usual: and this he attributes entirely to the *small quantity* of caustic employed, and to the other directions given for conducting its application.

VIII.

Morborum Puerilium Epitome. Auctore GULIELMO HEBERDEN, Regis Reginæque Britanniarum Medico Extraordinario. 8vo. pp. 72. Londini. 1804.

In this little classical treatise, Dr Heberden has given a very perspicuous and sensible epitome, of what is generally known with regard to the diseases of children, as well as a judicious account of the diet and regimen, which should be attended to, with a view to the prevention of disease. The reason, however, which induced the learned author to believe that such an epitome was a desideratum in the profession, does not appear to us very cogent or satisfactory. It is, that the best writers have somehow neglected this department of practice—'Quam medicinæ partem nescio cur scriptores optimi videntur præteriisse, et quasi infra se positam despexisse.' Yet, with some little inconsistency, he informs us, that his work is 'minutum sane, et exile, in quo *nihil fere quod non dictum ab aliis*, plurima etiam trita invenies.' And we fear, indeed, that this latter observation is nearest the truth. The author's precepts are generally judicious; and he has proscribed all those absurdities, which are too often to be found, if not in medical treatises, at least in the practice in the diseases of children. The following is his chapter on squinting.

'Ubi quis natus est strabo, id vitium permanere solet. Quod si postea inciderit, sæpe potest tolli. Unicum remedium est, oculum sanum per aliquot dies comprimere.' (p. 38.) The same perspicuous brevity is preserved throughout the work; and the purity and elegance of the style will greatly recommend it to a certain class of readers.

IX.

Samuel Thomas Soemmerring, Abbildungen des menschlichen Auges. Folio. Frankfurt am Main. 1801. 110 pp. with 8 shaded and 8 outline plates.

PROFESSOR SOEMMERRING has long been engaged in making preparations for a series of anatomical treatises on the organs of the senses. As introductory to these, and as a specimen of the manner in which the work was to be executed, he some time ago published his inimitable plate of the basis of the brain and origin of the nerves. In pursuance of his plan, the magnificent volume now before us is dedicated to the anatomy of the human eye; on which subject it is unquestionably the most complete and accurate work yet published. We must however regret, that he has not rendered it still more useful and more interesting, by relieving the dryness of mere anatomical description, by the introduction of the physiology, and even the pathology, of this important organ. We must also regret, that the text and explanation of the plates, which will be studied and referred to as standards by the anatomists of every nation in Europe, are written in a language so little understood in other countries as the German.* The enormous expense of the work might also be urged as an objection to its general utility; but our author's object was to surpass his predecessors in every particular, and we can easily pardon a little luxury in a publication which explains so difficult a subject in so masterly a manner. Besides, there is not the least doubt that the plates will be immediately copied by anatomical compilers, and that the improvements they contain will be widely circulated, so far at least as can be done by less exquisite engravings.

The first plate contains, front and profile views of the eye, in the male, in the female, in the Negro, in the Albino, and in a young woman asleep, admirably drawn from life. Indeed, they have nothing of the coldness and harshness of death. To artists they must form invaluable studies, if, as Professor Soemmerring assures us, there is scarcely to be found, even in the works of the greatest masters, an accurate representation of this most expressive part of the human countenance. In the text belonging to this plate, our author describes minutely the external difference between the eye of the male and of the female, of the European and of the Negro, and of the European and of the Albino, and explains the situation of the eyelids during sleep. In his comparison of the eyelids of the male and of the female, he introduces

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[*] Since the first edition of this Review was published, we have seen a copy of the plates, with the text in Latin, entitled, 'Icones oculi humani.'

some physiological observations on the texture of the skin in the two sexes, and the manner in which its functions are affected by it, which he considers as new and interesting, but which are entirely hypothetical, and evidently misplaced.

The second plate represents every thing connected with the eyelids, the orbicular muscle, nerves, arteries, veins, lacrymal gland, points, and sac, &c.

The third plate gives an accurate and distinct view of the basis of the bony orbit, of the muscles moving the eye, and of the nerves belonging to these muscles.

The fourth plate shows the distribution of the ocular artery, the junction of the veins which come from the different parts of the eye, and the relative size, form, and anterior termination of the four recti muscles. In the distribution of the ocular artery, Professor Soemmerring has pointed out some peculiarities, in all of which it bears a striking analogy to the carotid; but these are by no means peculiar to the ocular artery, but common to all the internal branches of the carotid.

The fifth plate is of very great importance, as it represents the internal structure of the eyeball. The anatomical preparations for this plate were attended with very great difficulties, but seem to have at last been entirely overcome, and brought to a very great degree of perfection by the dexterity and perseverance of Professor Soemmerring. In the first place, the eye alters so quickly after death, by the evaporation of the aqueous humour, that it is only met with in a natural state, when the eyes have closed spontaneously at the moment of death. It is next extremely difficult to take it out of the orbit without injuring it in some way or other. Lastly, it is absolutely impossible to make any section of it, without deranging its structure more or less. Divided in the air, it becomes mis-shaped by its own weight; in water, the coats become thickened, and roll up; and in alcohol, they lose their transparency. When previously frozen, some part or other always bursts. Professor Soemmerring tried, in vain, every expedient he could think of, to lay before his artist preparations which should represent the parts as they exist in the living body; and as he did not think himself justified in presenting to the public, delineations as anatomically correct, in which there were obvious inaccuracies, and undeniable derangements from the natural form, he endeavoured to correct these, by comparing preparations made in various ways, and by estimating the extent of the error. Our author's delineations differ, therefore, frequently from those of his predecessors, and also from the preparations found in most museums; but he contends, that his approach nearer to nature and truth. The first and second figures represent the anterior and posterior half of the eye, divided vertically; the third, the lower half of the eye divided horizontally; the fourth, fifth, and sixth, the posterior, anterior, and side view of an eye, from which the sclerotic and choroid coats have been removed, so as to leave the retina entire. There are thirteen other figures on this plate; but it is obvious what they are intended to represent.

In these figures we may notice the following peculiarities. The general form of the eye is more natural. The iris is always represented perfectly flat, not arched in the smallest degree. In the very centre of the retina, there is a small hole, surrounded with a golden yellow border. Professor Soemmerring attributes his discovery of this appearance to the examination of the eyes of a young man recently drowned, which were therefore unaltered by evaporation from their surface, or by mechanical pressure. It is not seen on making a common section of the eye, because the retina, when divided, forms exactly at that place several folds which conceal it, and which have been represented as natural to it, although they only originate from the want of the usual distension. This he alleges as the probable reason why it remained so long unnoticed. The retina terminates at a short distance from the ciliary processes. As this is a disputed point, it is interesting to know the opinion of so great an authority as Professor Soemmerring concerning it. 'To enable me to ascertain with certainty, that the retina terminates here, and does not extend to the capsule of the crystalline lens, and still less cover it, I have very frequently examined the human eye with the greatest care, and had it examined by my most able pupils. In eyes sufficiently fresh, it is so evident, that it does not admit of doubt. But if the eyes have lain for some time in alcohol before they are examined, the ring between the termination of the retina and the crystalline lens becomes opaque and whitish, so as to appear a continuation of the retina, which is naturally opaque and whitish, but which, by the action of the alcohol, becomes proportionally more opaque and whiter. A still more convincing proof that this is the real termination of the retina, is afforded by the circumstance, that if an eye from which the sclerotic and choroid coats have been removed, be suspended for a length of time in alcohol, the retina begins to separate at this place from the vitreous humour; and in this case, the separation does not only take place exactly in this circle, but its edge is so smooth, clean, and sharp, that no art could imitate it.' Although these arguments seem to decide the question, and some of the facts are correctly stated, yet even in fresh eyes, both of man and other animals, on washing away carefully the *pigmentum nigrum* with a hair-pencil, the retina appears to be continued forwards to the edge of the crystalline lens. Besides, the anterior portion of the retina is firmly attached, while the posterior is only in close contact with the choroid coat, which not only causes some difference of appearance, but determines the line at which it separates, on being suspended in alcohol.* Professor Soemmerring has also accurately delineated the change of form which the crystalline lens undergoes in the progress of life. After birth, it increases considerably in circumference, but little if at all in breadth; so that it gradually becomes less spherical, and more lenticular in shape. The four last figures represent the segments, coats, and fibres into which the lens may be divided, after it has been coagulated by alcohol. But these appearances, Professor Soemmerring, with justice, considers as merely effects of the coagulation, and by no means illustrative of the texture of the lens in the living body. The figures contained in this plate, are considered by our author as of so much importance, that he has given them in three different states; in outline,—highly finished,—and coloured.

The sixth plate contains magnified views of the size, form, distribution, &c. of the blood-vessels of the iris, choroid coat, retina, pupillary membrane, and capsule of the lens.

The seventh plate is principally intended to give distinct and complete views of a well-formed orbit, along with the arteries of the roof of the orbit, the situation of the lacrymal gland, the real structure of the pulley for the tendon of the trochlearis muscle of the eye, and the corrugator supercilii.

The eighth and last table is both original and important. It contains a vertical section of the eye *in situ*, in which every part of the organ of vision is represented in its natural relative situation. The first figure has undergone no further preparation, and the eyelids are represented as closed. In the second, the eyelids are open, and various parts are removed, that others may be seen. The third figure is merely an external view of the eye in profile, to correspond with the second. But the last is a most excellent magnified outline of the first, which forms one of the most instructive views of the eye ever published.

Upon the whole, this work will add to the anatomical reputation of Professor Soemmerring, and will be referred to by every one desirous of making himself perfectly master of the structure of this delicate and important organ. We trust that the indefatigable author will be encouraged to proceed with his plan, and that he may be enabled to develop the anatomy of the other organs of our senses, with the same accuracy and elegance which distinguish the present treatise.

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* In different preparations in Dr Monro's Museum, the human retina is seen unequivocally continued forwards to the edge of the lens, becoming imperceptibly attenuated. In the eagle's eye it distinctly lines the ciliary processes; but in the bullock's eye it seems to terminate at the beginning of these processes, becoming decidedly and suddenly thinner.

X.

Continuation of an Account of a peculiar Arrangement in the Arteries distributed on the Muscles of slow-moving Animals, &c. By Mr Anthony Carlisle. *See* Philosophical Transactions for 1804, p. 17.

The account, of which this is the continuation, was published in the Philosophical Transactions for 1800. The subject is highly interesting, and the commencement of its investigation by Mr Carlisle is promising. We must, however, consider it only as the commencement; for many more facts must be collected, before any satisfactory conclusions can be drawn.

Mr Carlisle's principal discovery, is that of a peculiarity in the distribution of the arteries to the limbs of several slow-moving animals, the lemur tardigradus, lemur loris, bradypus tridactylus, and bradypus didactylus. In all of these, the arteries distributed to the slow-moving muscles, instead of being arborescent, are suddenly divided, at their entrance into the upper and lower limbs, into a number of equal-sized cylinders, which occasionally anastomose with each other. They are exclusively distributed on the muscles of the limbs; whilst the arteries sent to all the other parts of the body, even to muscles whose motion is not unusually slow, as those of the neck and head, and also those arteries of the limbs which are employed upon substances not muscular, divide in the usual arborescent form.

'In all the quadrupeds before mentioned, the other blood-vessels, as well as the nerves, presented the common appearances. The size of the heads, and the interior capacity of the skulls, both in the *bradypus tridactylus* and the *lemur tardigradus*, seemed smaller in proportion than is usual among animals, so that the quantity of brain must be less than ordinary.'

This curious fact has given rise to the following ingenious reasonings from Mr Carlisle.

'The effect of this peculiar disposition of the arteries, in the limbs of these slow-moving quadrupeds, will be that of retarding the velocity of the blood. It is well known, and has been explained by various writers, that the blood moves quicker in the arteries near the heart, than in the remote branches; and also, that fluids move more rapidly through tubes which branch off suddenly from large trunks, than if they had been propelled for a considerable distance through small-sized cylinders; besides which, the frequent communications in the cylinders of the *bradypus tridactylus* must produce eddies, which will retard the progress of the fluid. From these, and a variety of other facts, which it is not necessary to specify, it will appear, that one effect upon the animal economy, connected with this arrangement of vessels, must be, that of diminishing the velocity of the blood passing into the muscles of the limbs. It may be difficult to determine, whether the slow movement of the blood sent to these muscles be a subordinate convenience to other primary causes of their slow contraction, or whether it be of itself the immediate and principal cause. The facts at present ascertained, relative to muscular motion, do not authorize me to treat decidedly of the share which the vascular system holds in the operation of muscular contraction. Certain it is, that a larger proportion of arteries is sent to the muscles of quadrupeds, than to the ordinary substances; and the extreme redness of these organs shows that their capillaries are of large diameter. A greater degree of redness is also observable in those muscles (of the same animal) which are most frequently called into action. The habits of life among the tardigrade animals give occasion for the long continued contraction of some muscles in their limbs: these creatures are represented clinging to the boughs of trees, and remaining thus, without locomotion, for several hours. The powers which require so long a time to determine the contraction of a series of muscles, are probably no less slow in restoring the parts to their former condition; or, if the restoration is to be effected by antagonist muscles under the same circumstances, then the flexion and extension of every part of the limbs will correspond as to time.'

In the Continuation, Mr Carlisle gives an account of the facts which have occurred to him in the further prosecution of his subject. The examination of the distribution of the arteries to the masseter, pterygoid, and temporal muscles of the ruminating and carnivorous animals, did not afford the evidence he expected, as it is aborescent. The rete mirabile in these animals, and the circuitous course of all the arteries going to the human brain, and their confinement in bony passages, seem intended to retard the velocity of the motion of the blood. The spermatic arteries are the longest arterial cylinders in the body; and the slow action of the muscles supplied by them, and their occasional long continuance in a contracted state, are well known. The next in resemblance are the intercostal and diaphragmatic arteries. The circuitous course of the arteries which supply the iris in man is remarkable. The tails of animals, when they are prehensile, are supplied by one cylindrical artery. The swimming-bladders of some fishes also afford examples of cylindrical arteries supplying slow-moving muscles. The intestinum ileum of the cavia agouti of some other animals, show a remarkable extension of undivided arteries. As an instance of an opposite arrangement, Mr Carlisle quotes the heart, a muscle whose motions are more rapid, and whose arteries are more quickly subdivided, than those of any other.

XI.

Practical Observations on Insanity, in which some Suggestions are offered towards an improved Mode of treating Diseases of the Mind, and some Rules proposed, which it is hoped may lead to a more humane and successful Method of Cure; to which are subjoined, Remarks on Medical Jurisprudence, as connected with diseased Intellect. By JOSEPH MASON COX, M.D. Fishponds, near Bristol. 8vo. London, 1804. pp. 166.

OUR attention was naturally attracted by the notice of a new Treatise on Insanity. We flattered ourselves, that a man of a liberal education, sensible of the progress which physical and moral sciences are daily making around him, and furnished with the materials of many years experience, would have proved an author equally instructive and beneficial to the public. We are sorry, however, to say, that the writer of the present tract is but a lamentable instance, either of the impossibility of writing any thing satisfactory on this subject, or, what may be still more reasonably presumed, of the propensity in some men to choose inadequate means to attain a very good object. Dr Cox is physician to a private house for the reception of lunatics; and however successful he may have been in his practice, he probably has thought, that a publication on Insanity would be no disparagement to his character, nor to an institution which depends entirely for its support on the good opinion of the public. It is not surprising that he should have yielded to so strong a temptation, however much it may be lamented that it should have induced him to hazard thereby his reputation. Many men, who are well fitted for active life, scarcely know the principles upon which they act. Whoever, therefore, should, from the simple perusal of the book now under review, suspect the capacity of the author, as a superintending manager of lunatics, might possibly be very much in the wrong. A good deal of ingenuity appears now and then in his practical observations; and the facts adduced in illustration of his principles are indeed so happily chosen, that they will certainly excite doubts in those who are sceptical concerning the authenticity of medical cases in general. The *Fishponds Asylum* is, as far as our information goes, and from what we can discover in these practical observations, upon as good a footing as most of those private houses are now in this country.

It is but equitable to state, that the author seems fully sensible of his need of that indulgence, which is readily granted whenever it is claimed with sincerity. In this respect, his first and last pages are in his favour. Why then has he treated preceding writers with such neglect, that the names of Haslam, of Ferriar, and of Pinel, are nowhere to be found in his book? Has Dr Cox been so remiss as not to consult those recent authorities, or so confident as to be tempted to slight them all, when put in competition with his own?

In the history of a *maniacal attack*, the author remarks, that the approach of mental alienation is generally very gradual; that it is at first only observable in a change of accustomed habits, disposition, taste, and pursuits, and in a number of irregular actions of the nervous system, in consequence of which the powers of some parts are considerably increased, while those of others are proportionately depressed. Now, we are decidedly of opinion, that a debauchee, who should be ashamed, or only weary, of his former course of life, and should be willing to change his habits of gaiety and dissipation for the sober walks of virtue and mental improvement, might acquire a new taste and a new disposition of mind, without any chance of being thought mad by his friends: He might even become subject, in consequence of his sedentary pursuits, to some degree of hypochondriasis, without ceasing to deserve a place in the numerous tribe of rational beings. What becomes, then, of the characteristic features of madness, since, on some occasions, they claim our esteem and admiration? There is much reason to suspect, that madness, irrationality, ignorance, obstinacy, &c. are sister qualities; so that we should most readily call a man mad for reasoning and acting differently from ourselves, if he could not find a certain number of persons inclined to reason and to act in the same manner with himself, and who can thus support the grounds of his conduct. A natural philosopher meets a stone-cutter, and tells him that his chisel never touches the stone which it breaks into a thousand pieces. His statement will be approved of by men of the same standard of intellect with himself; but he will necessarily be laughed at and be thought mad by others, because they neither know nor can conceive any possible way of cutting a stone without touching it. The incessant testimony of their senses convinces them they are in the right;

and whoever wishes to persuade them that they are in the wrong, is by them considered ignorant, presumptuous, or mad, according as they believe him to be in other respects their inferior, their superior, or their equal in knowledge. The truth is, that any train of thought, or any line of conduct to which we are not accustomed, and the grounds of which we cannot comprehend, shocks our understanding; and unless we implicitly acknowledge our mental inferiority, we must think our opponent unacquainted with the subject, and moreover incapable of perceiving truth and propriety, when presented to him in the plainest manner. It is a peculiar species of relative ignorance, to which, for want of a more satisfactory expression, we give the name of Madness or Insanity:—such is the elementary notion of madness, and the standard to which must be referred any dispute respecting the rationality or irrationality of our ideas and actions. The same principle applies to the consideration of the conduct of an individual, when contrasted with itself in some of its most striking changes and varieties. If no adequate reason for such changes can be found, none at least that is consistent with common experience, we are apt to recur immediately to some obscure cause, expressed by a word equally obscure:—we say, this man's conduct is incomprehensible; he is mad. But if we were to say, that because any man does not act as most men would have acted in his situation, he must therefore have lost his reason, we should condemn alike all virtuous and villanous actions of a higher stamp. The generality of men can as little comprehend true generosity and disinterestedness, as they can explain a sudden change in the intellectual and moral character of their neighbour. If we attempt a distinction between useful, useless, and hurtful kinds of insanity, we only expose, more clearly, that selfishness and ignorance, from which our vulgar notions of madness have been derived. A man may be inconsistent with himself in the whole range of his propensities and dispositions at different periods of his existence; nay, we continually are so in detached parts of our own conduct: The causes of such changes may be discoverable by all men, by a few only, or by none at all, not even by ourselves; and how many of us often act without the consciousness of any motive whatever! The term *madness* is vague, because it is simply relative: in common life, it is most shamefully abused, from its being universally taken in a bad sense, and thus serving the purposes of narrow and illiberal minds, equally impotent in their exertions, and despotic in their judgment. A *history* of Insanity is quite unintelligible to us. We know of various peculiarities in the moral and intellectual character of men; a strong propensity to theft, for example, to falsehood, to sensual indulgence; an inordinate and exclusive attachment to the bustle of fashionable life; a passion for poetical effusions; a consummate patience in the pursuit of dry and abstract studies: These, and many others, may be so many deviations from the plain dictates of reason; they are generally conceived to be fit subjects for the punishment of a court of justice, the censure of the moralist, the humour of the dramatist, or the amusement of the common observer; but no body has yet dreamed to give any history of them off the stage, or to confine their victims within the walls of a medical house of correction.

This part of the work before us ends with some observations on the duration of maniacal paroxysms, and on the probability of their future prevention; which are so completely out of place here, that our author has with care, though without any mercy for his readers, brought them forth a second time, when he comes to treat of the prognosis.

Under the head of the *predisponent and exciting causes* of insanity, much confusion still prevails. An attempt towards a clear and determinate distinction between them might be useful, if in any degree practicable; but, with the exception of a few peculiarities of original organization, the various aggregates of which are termed *temperaments*, or constitute an hereditary taint, no line of demarcation can possibly be traced. And the reason of this is evident. Each of those causes may be first or last in that succession of powers which is adequate to the production of the disease; and how is it possible to assign a fixed place to causes, which can mutually exchange their period of action, without altering the result? This remark, although generally applicable to the principles of medical etiology, must appear to bear still more strongly on the different causes of insanity, from the nature of that part of the system in which the malady is chiefly seated. The sanguine and the melancholic temperaments, exquisitely marked, are the only ascertained states of the body, which, independently of an hereditary taint, predispose to mental derangement. If this be a fact, supported by common observation, it is no less susceptible of important inferences in the treatment of lunatics. For the very expression of that fact indicates the particular disposition of the nerves in any given case of mental disorder which is consistent with the presence of the disease: And whenever the nature of the exciting causes is unknown, or their action cannot be abstracted, the morbid association of those causes, at least with a known state of the system, may be destroyed, and some rational plan of treatment devised for the recovery of the patient. An hereditary taint is, on the contrary, little more than a warning of impending danger; and although it lies, like the other, in the organization, that peculiar state is a latent cause, not likely to form the ground of a regular and systematical practice.

The author next divides the predisponent causes into connate and acquired. Among the first, we find hereditary affections; singularity of temper; a liability to be affected by trifles, and to remain unmoved amidst the most tremendous shocks. The acquired predisponent causes are more numerous:—all intense and exclusive occupations of the mind. Like all actions of the body, they have a natural tendency to weaken and destroy their own productive powers, when persisted in too long, or exercised with an undue degree of energy. The association of ideas is thereby rendered looser and more difficult; confusion of thought arises, accompanied with a restless anxiety, which is sometimes carried to a paroxysm of fury, and usually characterizes this species of lunacy. So various, however, are the degrees of danger attending the separate and exclusive exercise of our different faculties, that Dr Pinel expressly states, as the result of his extensive observation at Bicetre, that almost all his patients owed their mental disorders to the influence of their imagination, applied to different subjects; while not one natural philosopher, and still less a geometrician, was to be found among them. Dr Cox has not been able, in his own practice, to trace the influence of defective systems of education, excessive venery, the influence of the heavenly bodies, in producing mental derangement. But among its causes, he enumerates a habit of intoxication, external heat applied to the naked scalp, original malconformation of the organs more immediately connected with the intellect, intense study, neglected exercise, a sedentary life, certain chemical poisons.

The exciting causes are mental or corporeal. In the first class we find the depressing and exciting passions; religion and love being uppermost among them. We are more inclined to excuse than to praise the good nature of our author, who wishes to persuade, in the most gentle manner, Methodist preachers, that they often mistake lunatics for converts, and that their ministry is better calculated to fill madhouses with its victims, than heaven with the reclaimed. We advise the ingenious Doctor not to waste upon such men his stock of reasoning powers; but whenever they shall come within his reach, to wash and cleanse thoroughly their primæ viæ with emetic tartar or the swing; allowing them, at the same time, a good strengthening diet, to restore them to society, with a *mens sana in corpore sano*, the grand requisite for private happiness and social virtue.

The corporeal exciting causes are varied and numerous; their repeated application induces sometimes a predisposition. 'Excessive venereal indulgences, intoxication, heat, profuse hæmorrhagies, previous fever, suppressed evacuations, repelled eruptions, old sores dried up, injuries done to the head, painful protracted parturition, tumours and peculiarity of shape of the parts about the brain, are the principal, among many other corporeal causes of mental disease.'

On this long enumeration of causes, we must observe, 1st, That whoever will take the trouble of comparing the lists of the predisponent, and of the exciting causes together, will have ample opportunity for ascertaining the truth of our remarks concerning the indistinctness of those scholastic and arbitrary classifications; 2d, That we see no reason for confining the generalization of the principles of action of the exciting causes to such as are called mental only. To speak of these as depressing or stimulating causes, appears to us perfectly correct in a speculative and practical point of view; why then not arrange the corporeal causes under the same general heads? Without such a summary classification, their numbers will be increased to an indefinite extent; for every individual system is subjected, independently of the more general causes, which act with a greater or less uniformity on the body, to the influence of its own idiosyncrasies, the observation of which is exclusively reserved for the empirical sagacity of the practitioner. To enter into minute particulars on a subject which is not susceptible of sufficient division for practical purposes, is not only tedious in the extreme, but is practising a dangerous deception on the mind of the reader, who relies on the extent of supposed experience, and contracts the habit of passive acquiescence, baneful beyond all measure in the career of medical studies.

The bare mention of a proximate cause in diseases of the nervous system, is still more ridiculous, than to apply that most obscure of all terms to any other affection of the body. We profess ourselves totally ignorant of the meaning attached to the word by most medical authors; and we give full credit to Dr Cox for the following truism—' The proximate cause of insanity is the actual condition of the system wherein the disease consists.' Change but the word *insanity* for that of any other complaint whatever, and we have at once as complete an explanation of the nature of the proximate cause of them all.

The *Prognosis* in diseases of the mind is peculiarly important, in so far as it may affect the civil rights of the afflicted person, and lay a foundation for a proper classification of the varieties of the disease, applicable to its management and cure. The author has been extremely negligent in the arrangement of his observations on this subject, or rather has totally overlooked the utility of any thing like order and method in the statement of his numerous grounds of judgment. The greater part of them are far from being peculiar to the class of diseases in question, but they evidently apply to all diseased actions of the nervous system. They ought therefore to be recalled by induction to some common points of view; such, for example, as the longer or shorter continuance of the disease; its intermittent or continued type; its connexion with a known or unknown, a curable or incurable state of the body; the vivacity or depression of the nervous system connected with the disease.

The result of our author's experience as to the probable termination of mental derangement, is as follows. Hereditary or long continued lunacy; religious insanity; insanity connected with paralysis, hemiplegia, fatuity, or other diseases of this class; insanity preceded by occasional pains in the head, and particularly in the cerebellum; insanity afflicting rich citizens exchanging activity for indolence (a bounty to industry); are not easily cured. 'Insanity itself (Dr Cox observes) is rarely fatal. When, however, the symptoms of furor are incessant and excessive, accompanied with insensibility to natural and artificial stimuli, with disordered action and appearance of the eyes, a fatal termination may be feared.' It must be remarked, however, that although a chronical and permanent depression of the nervous system supervening to a maniacal state be, in general, a most unfavourable sign, an appearance of stupidity and heaviness, to use the words of Dr Ferriar, when a maniacal fit is going off, is rather a favourable symptom; the length of the lucid interval being generally proportional to the degree of this appearance.

When, on the contrary, the disease has been but of short continuance,—is owing to accidental or obvious causes,—the subjects of hallucination vary,—there are lucid intervals,—the natural disposition is not much changed,—the ideas are of a gay and interesting complexion,—insanity succeeds parturition,—the expression and colour of the countenance change frequently,—the temperament is sanguine,—the insanes are timid;—the prognosis is favourable. Dr Ferriar has observed, that those species of insanity in which the temper is more affected than the understanding, are obstinate; and he adds, that as these often happen in persons who seem otherwise perfectly healthy, there is a total want of indication in such cases.

In the *Diagnosis*, Dr Cox begins with an attack on the definition of Dr Cullen, *delirium sine febre*, since pyrexia, as he justly observes, is a frequent attendant on madness. This objection, however, constitutes a strong analogy between insanity and delirium, which nearly the whole of the present chapter is intended in vain to disprove. The observation, that 'it is not every perturbation of mind, not every confusion of thought, that constitutes insanity, even when fever does not exist,' is a new source of uncertainty, which we readily anticipated in our observations on the practicability of a definite history of the maniacal state, Delirium, according to our author, is in every case a symptom depending on previous acute disease; whereas madness is always a chronical complaint. In delirium, the patient is not conscious of surrounding circumstances, such as his bed, chamber, &c. nor does he know his attendants; while the madman knows every thing about him, but reasons falsely concerning them. In most maniacs, also, there is a peculiar predominant idea, or class of ideas; in delirium, on the contrary, the ideas seem totally unconnected, and no sort of consistency is even observed. As in drunkenness, so in delirium, there are more evident marks of diseased actions of the system, particularly in the vessels about the head, than take place in madness.

Now, to follow this train of reasoning step by step—If madness be always a chronical disease, what becomes of those single paroxysms that yield readily to medical treatment, never to return? Delirium is not unfrequently the first symptom of an acute disease: insanity, on the other hand, may attend as a symptom, or follow as an effect, of puerperal fever. In delirium, patients are often so well acquainted with surrounding circumstances, that they get up, leave their bed-room, run into the country, and plunge into a stream. It is not a thing uncommon in delirious patients to dwell on some particular subject. Whoever, on the contrary, has visited a madhouse, must have heard from its unfortunate inhabitants the most incoherent speeches during the time of their paroxysms. It seems rather surprising that Dr Cox should deduce one of his grounds of distinction from the determination of blood to the head which takes place in delirious patients, when he has expressly stated, in his history of a maniacal attack, that the face of maniacs is sometimes flushed, their eyes prominent and animated.

The diagnosis between mania and hypochondriasis seems equally imperfect.—' In most cases of the latter complaint, though there exist a peculiar state of mind, a seriousness, gloom, and listlessness to motion, groundless fears, and a most obstinate belief and persuasion of their reality; yet there is no defect of judgment, no injury of the reasoning faculty.' But if reason and judgment be any thing more than mere words, if they are to regulate our notions of things external and internal, as long as those faculties remain in a sound state, how can groundless fears be accompanied with such an obstinate belief in the reality of their object? How can the affected person attach *bona fide* implicit faith to what appears absurd and ridiculous to every body around him?

The length to which the general observations arising from the nature of the subject has already carried this article, precludes our entering at large upon the consideration of those details of treatment which are repeated by every succeeding author only with the effect of increasing the size of the book, and of disappointing our eagerness for new information. Some remarks, however, on a few points, which may appear of greater importance, or more strongly illustrated in the present tract, will suffice at present, reserving for another occasion the critical examination of that labyrinth of speculation and practice which bring ridicule on all the theories, and opprobrium on all the modes of treatment that have insanity for their object.

Our author adopts the customary division of the means of cure, into *moral* and *physical.* He seems to be of opinion that it is frequently adviseable to humour the whims and wrong notions of the patient; and he relates, in support of this, several cases, among which we shall choose the following as an example of that principle of management.

'Mr ——, aged 36, of full habit, melancholic temperament, extremely attached to literary pursuits, and subject to depression of spirits without any obvious cause. His lucubrations were sometimes extended through whole nights in succession; and at these periods he was very abstemious, drank only water, and avoided animal food. His friends remonstrated with him on the hazard of such proceedings; and his housekeeper being urgent for his adopting some plan that had his health for the immediate object, the idea struck him of her having some sinister design from her importunities, and that she intended to destroy him by means of a succession of poisoned shirts, under the baneful influence of which he believed himself then suffering. No arguments availed, and all reasoning was lost to prove his mistake: Therefore the hallucination was humoured, a suspected shirt was exposed to some simple chemical experiments, continued, repeated, and varied with much ceremony, and the result so contrived as to prove the truth of the patient's suspicions: The housekeeper, notwithstanding all her protestations of innocence, was served with a pretended warrant, and, in the presence of the patient, hurried out of the house by the proper officers, and secluded from his observation for a time, while he supposed she was in gaol, expecting an ignominious death. After this preface, a formal consultation was held, certain antidotes prescribed; and after a few weeks, he perfectly recovered; a new plan of life and regimen were adopted, and he has ever since continued in a perfect state of health.'

The reader will probably be somewhat surprised at meeting, some pages afterwards, with a rule not very consistent, at first sight, with the preceding one.—'It has been a very general, but *erroneous* idea,' (says the author, p. 49.), 'that the subjects of hallucination should be humoured and attended to, in order to dissipate or correct them;'—' but such a practice is not only nugatory, but often productive of aggravation of symptoms.' Such downright contradictions excite a sense of disgust; since the smallest degree of regard for himself or his reader might have enabled the writer to avoid them. The only excuse he can plead in his defence, is the apparent difficulty of finding out a reason why, in some cases, one practice does readily succeed, while, in others, it tends only to add new energy to the complaint. Let us take the instance above given, of the man who fancied himself in danger of being poisoned by his maid, because she seemed to interest herself in the recovery of his health. The imaginary notion not being founded on any actual perception, but resting exclusively on some vague and whimsical supposition, common reasoning could be of no avail; and direct opposition would only have strengthened it, by stimulating that spirit of peevishness and suspicion in which the morbid idea originated. Let things therefore follow their natural course, under the wrong supposition of the patient; let his fears and resentment be soothed and quieted by the general sympathy of his attendants, and his belief in the confinement of the offender; let means be adopted by men in which the patient confides, to remedy the ill effects of the poison: His anxiety and suspicions will slowly subside, and with them also the notions arising from those acute feelings: The cure will be effected, in the same way as most other nervous diseases are frequently removed, by physicians who know how to display their professional skill, by adopting implicitly the nosological creed of their patients. If we consider, on the other hand, a case of religious insanity, nothing can lessen the horror of such imaginary feelings. The apprehension and despair under which the wretched being groans, will surely never rouse his languid frame to that degree of spirited confidence which delights in resting on the goodness and generosity of our Almighty Judge: he will continue to see Him through the gloomy medium of terror and of despondency. Like the vitiated organ that confounds the bitter with the sweet, the defect lies not in the object perceived, but in that which perceives it. The error cannot be combated by the common course of experience, nor by any direct appeal to the senses. If you assent to the justness of his notions, you can never offer to him any terrestrial consideration, in the way of consolation, that can be equivalent to the loss of salvation. On the plan of speculative opposition, arguments opposed to arguments will go but little way with a mind whose sensibility is at the same time so perverted and so acute, that the two elements of sympathy, resemblance in kind and degree, are here totally absent. Nothing therefore remains, but to employ those means which experience has put into our hands, to restore the nervous system to its healthy standard, and regenerate the perceptive powers. The most important, undoubtedly, is the complete abstraction of every aid to those associations which act so strongly as depressing powers on the system at large. In page 41st is given the history of a case of religious insanity, well worthy the attention of the reader.

Dr Cox very properly insists on the utility of a division between *sthenic* and *asthenic* mania, since the physical treatment differs entirely in the two cases. His statement of the characters of each is accurate, and will be perused with advantage. We cannot recommend with equal confidence, the proposal of removing occasionally different parts of the cranium with the trephine, in order to allow more room to its contents (p. 60.); or the assertion, 'that no plan can be more reasonable, where the vessels are loaded with an obvious determination towards the head, than abstraction of fluids, and a very limited quantity as part of the diet.' (p. 58.) Upon the same principle, indeed, patients in the delirium of fever ought to be deprived of all diluents, because their face is flushed, their eyes suffused, and there exists an increased action of the vessels within the cranium.

Two cases of puerperal mania are related, in which the tonic plan proved successful. The author observes, that in this species of insanity, the ideas have no peculiar character.

Three instances of accidental cures are added. One was the case of a gentleman who recovered from a maniacal state on his receiving from another madman a violent box on the ear. Another of a patient who fell backwards down stairs, fractured his skull, was trephined, and recovered both from the operation and from an inveterate insanity. The third case is still more surprising. The maniac, who is the subject of it, had been, previous to his confinement, a great rake. In attempting to escape from the madhouse, he bruised his head, fractured his tibia, was confined two months, and was sent home afterwards with his tibia adjusted, his head right, and his moral character thoroughly reformed. Thus the medical art sees its limits enlarged, as usual, through the medium of accidental evils, in restoring sense and virtue to the insane and the wicked.

On the use of Digitalis our author observes, that no case ought to be despaired of in which it has not been tried, and the employment of that valuable medicine persisted in, till some obvious effects have been produced. It is most adviseable in those maniacal states, where there is an increased circulation, without other symptoms of pyrexia; a few drops of the tincture, or half a grain of the powder, are to be given first; and the dose must be gradually increased till the desired effect is produced. 'I had a patient (he adds) whose system was kept saturated, as it were, with digitalis for weeks in succession, whose mental wanderings seemed regulated by the state of the circulation: When the pulse was at 90, he was constantly furious; at 70, perfectly rational; at 50, melancholic; and at 40, half dead. This man was at length perfectly cured by such a dose of this remedy as kept the pulse pretty uniformly at about 70; and yet he had sometimes taken three drachms of excellent tincture of digitalis three or four days following.' (p. 85.)

Much information may be collected in the present tract concerning the employment of the swing in the treatment of insanity. Our author uses both the oscillatory and rotatory swing, according to circumstances. For the description of those machines we must refer to the book itself, and content ourselves here with a brief statement of the alleged advantages attending their use. Eight cases are related of maniacs who have been indebted to it for their cure, after having resisted other means of treatment. It would appear from these histories, that the vertigo, nausea, vomiting, and other painful sensations which it produces, are useful in checking the irregular associations of living actions, in clearing and shaking different parts of the system; that its effects being considered as very distressing by the patient, the sole idea of its use, after he has experienced it once or twice, may often be employed to bring him to comply with the requests of his attendants. Such means are peculiarly adviseable in cases where torpid insensibility or excitement are very great, and render the usual methods unavailing. The swing, the author assures us, is perfectly safe, no permanent inconvenience having ever, to his knowledge, arisen from its use. Among the cases above alluded to, there is one in which phthisis was arrested by the supervening insanity, and did not recur after the cure of the latter complaint.

The *Appendix* is divided into two parts. 1. The mode of granting Certificates. 2. Medical Jurisprudence in cases of Insanity. It is a disgrace to the existing laws with regard to certificates, that any man who chooses to call himself a physician, surgeon, or apothecary, however incompetent and unprincipled, should be allowed to furnish these important instruments to the private malice of an enemy, or the barbarous avarice of a relation. It is to be hoped, that the bad effects which might naturally be expected to result from those regulations are greatly checked by the respectable character of the proprietors of lunatic asylums; otherwise it could hardly be supposed that they would have stood so long in a country where civil liberty is so well understood, and so securely guarded against arbitrary attacks. The author seems to regret that no legal order for confinement can be interposed in cases where men are carrying on the habit of intoxication to such a length as to threaten with utter, though slow destruction, their rational and living powers. We may inform Dr Cox, that such an institution for the moral recovery of drunkards, has actually existed on this side of the Tweed; not however on such a plan as to render it useful to the lower classes of society, among which this baneful habit now more particularly prevails; but confined to such people as could be maintained there at their own expense, till discipline and new habits had reformed their propensities, and restored strength to their frame.

This part of the book is too short to admit of analysis, and too important to be slighted. The reader who thinks that diffidence and caution are the true principles of wisdom, will read over and over again the present Appendix. Sagacity in observing and arranging, in every case, the various elements of maniacal derangement, is not to be subjected to rules; for these elements are susceptible of all possible variations in kind and in degree. However agreeable it is to substitute praise to censure, we cannot help wondering that the author should have been in the first half of his performance so unequal to what he has shown himself in the last part of it. Here we see in every line the benevolent, judicious, and philosophical physician. His ideas on the uncertainty of the general features of insanity agree so completely with ours, that he will, we trust, excuse our having rectified, in the former part of this review, such of his notions as seemed equally inconsistent with analytical accuracy, and with the import of his own reflections.

Upon the whole, we recommend the present book to the attention of the public, partly as originating in extensive experience, and partly as illustrating some new modes of practice, which may eventually increase our stock of resources against mental alienation. The cases related are, however, presented in too general a manner to enable the reader to deduce from them any conclusion of his own. He must adopt that of the author, which is necessarily a great drawback on their intrinsic value. It were much to be wished, that men whose turn of mind or previous habits are rather averse to method and generalization, could be persuaded that a circumstantial Case-book, supplied with daily reports on the physical and moral state of a limited but well chosen class of patients, and connected with the method of treatment, would become particularly useful in the hands of others. The superintendants of lunatic asylums would thus multiply to a considerable degree the benefits derived from their private experience, by unfolding the errors of the hypothetical theorist, and preparing the way for extensive and solid induction.

PART III.

MEDICAL INTELLIGENCE.

We announce, with much pleasure, the advantageous reform which has lately taken place in the medical department of the Navy; a reform, however, which was no longer an affair of choice, but of urgent necessity.

The service must soon feel the beneficial operation of the new regulations; and, instead of being the scorn of the profession, it will now, we trust, be enabled to secure to itself a fair proportion of medical skill. The invidious and pernicious preference so long shown to the Army, is now done away; as, by these regulations, the medical officers of both departments of the public service are equalized and encouraged by similar advantages and preferments.

The following are the particulars of his Majesty's Order in Council, of the 23d January 1805, for improving the situation of the medical officers of the *Navy*, which relate to such officers serving on board ships.

' It is ordered, that the number of assistants heretofore called Surgeons' Mates, to be allowed to the surgeons of his Majesty's ships, shall in future be regulated as follows.

First Rate, - - - -	3	Assistants.
Second Rate, - - -	3	ditto.
Third Rate, - - -	2	ditto.
Fourth Rate, - - -	2	ditto.
Hospital Ships, - - -	3	ditto.
And all other ships, entitled, according to the existing regulations, to bear Mates,	1	ditto.

' That no person shall, in future, be appointed to serve as an assistant to the surgeon of any of his Majesty's ships, who shall not have been found qualified, on examination, to serve as surgeon, or as first assistant; that the pay of assistants so qualified, shall be six shillings and sixpence a day, besides the ship's provisions; with half pay, when reduced, at the rate of two shillings per day, provided they shall then have served two years subsequent to the date of this regulation, and three shillings per day, if they shall have served three years from that date. That such assistants shall be required to furnish themselves with such surgical instruments as the commissioners for sick and wounded seamen shall direct; and that they shall be rated on the ship's books, where the complement admits of more than one, according to their seniority on the list to be kept by the sick and wounded board.

'Whereas there are many surgeons' mates now serving on board his Majesty's ships who have not obtained, and who may not for some time have an opportunity of obtaining the qualification before required; it is directed that such as serve as first or second mates or assistants, shall be allowed five shillings per day, and those rated third mates or assistants, four shillings per day.

'These three classes of assistants shall not be required to provide instruments, nor shall they be allowed half pay, but they shall, nevertheless, on proving themselves duly qualified, be placed on the same list with the other assistants, from the date of the first appointment they may receive after such qualification, and commence the time to be reckoned for half pay from such appointment.

'All surgeons of the Navy, who shall not have served in the whole six years, of which not more than three years time as hospital mate or assistant surgeon shall be allowed, shall receive, when employed, a full pay of ten shillings per day; and, when not employed, a half pay of five shillings per day.

'Surgeons of ships in active service, after having served six years, of which not more than three years time as hospital mate or assistant surgeon shall be allowed, shall be paid eleven shillings per day; their half pay to be six shillings per day.

'After having served ten years, allowing not more than three years as hospital mate or assistant surgeon, the surgeon's full pay shall be augmented to fourteen shillings per day, his half pay to remain at six shillings per day.

'Surgeons of receiving ships, slop ships, convalescent ships, prison ships, and all other ships, except hospital ships employed only in harbour duty, shall be allowed full pay ten shillings per day, with half pay according to the time of their service.

'Surgeons appointed to hospital ships shall receive a full pay of fifteen shillings per day, unless in cases where, by the length of their service, they may have become entitled to a superior rate of payment; their half pay to be regulated, as in the case of surgeons of other ships, by the length of their service.

'Every surgeon in the Navy, excepting surgeons serving on board receiving ships, slop ships, convalescent ships, or any other ships than hospital ships, employed only in harbour duty, shall, after twenty years service on full pay, including not more than three years time as hospital mate or assistant surgeon, be allowed eighteen shillings per day; and, after such length of service, all surgeons, in whatever ships they may have served, shall have a claim to retire on a half pay of six shillings per day; but if the cause of their retirement shall be ill health contracted in the service, and it shall be so certified by the commissioners for sick and wounded seamen, the rate of half pay, on such retirement, after twenty years actual service, shall be ten shillings per day.

'Every surgeon in the Navy, after thirty years service on full pay, including not more than three years as hospital mate or assistant surgeon, shall have an unqualified right to retire on half pay, at the rate of fifteen shillings per day.

'That medicines and utensils shall be provided for the service of his Majesty's ships and vessels at the expense of Government, in such proportions as shall from time to time be arranged by the commissionsers for sick and wounded seamen; but the surgeons shall be required to provide, at their own expense, such surgical instruments as shall be judged necessary by the said commissioners.

'No person shall be appointed physician to a fleet or an hospital, who shall not have served as surgeon at least five years; the daily pay of a physician, on his first appointment, to be one guinea; his half pay half a guinea.

'When he shall have served three years as physician to a fleet or an hospital, his full pay shall be one guinea and a half per day; his half pay fifteen shillings per day.

'The full pay of a physician who shall have served in that capacity more than ten years, shall be two guineas per day; his half pay one guinea per day.

'That physicians, when a residence is not provided for them, shall be allowed one guinea per week lodging money.

'To the widows of physicians and surgeons, such a pension shall be allowed as the Lords Commissioners of the Admiralty shall think it right to grant.

'None of the officers before mentioned, who shall retire from their respective employments without the approbation of the commissioners for sick and wounded seamen, or who shall refuse to serve when called on, if judged capable of service, shall be allowed to receive half pay, nor shall their names remain on the naval list. Their widows will not in consequence be entitled to any pension.

'No officer, of whatever description, shall be entitled to any of the advantages arising from this regulation, who shall not have served during the present war, or until he shall have satisfied the commissioners for sick and wounded seamen of his inability to serve; but such persons shall be permitted to remain on the same establishment on which they may now respectively happen to be.'

The medical establishment of the *Army* had been previously regulated by an Order of Council of the 22d May 1804, the particulars of which will not be unacceptable to our readers.

'I. Hospital mates for general service shall be appointed by commission from us, and shall have the full pay of six shillings and sixpence a day, nett, while employed at home, and of seven shillings and sixpence a day, nett, while employed on foreign stations; with half pay, on reduction, at the rate of two shillings a day, subject to the usual deduction.

'The widows of such as shall have served as hospital mates with our land forces abroad, and shall die on full pay, shall be allowed the pension of sixteen pounds per annum: The children of such hospital mates, and the widows and children of those who shall die on half pay, shall be eligible to allowances from the compassionate fund, according to the rules established for the distribution of that bounty.

'Hospital mates appointed for temporary and local service, shall not receive commissions, nor be entitled to any of the other above mentioned advantages, but shall remain in all respects on their present footing.

'II. The assistant surgeons of our regiments of Dragoon Guards and Dragoons, Foot Guards, and Infantry of the Line, shall, without distinction as to their having served at home or abroad, have the full pay of seven shillings and sixpence a day, nett; with half pay, when reduced, at the rate of three shillings a day, subject to the usual deduction. The assistant surgeons of our regiments of Dragoon Guards and Dragoons shall, while on full pay, receive the further allowance of one shilling a day for a horse, as at present.

'III. The apothecaries to our forces, and the surgeons attached to the respective recruiting districts in Great Britain, shall continue on their present footing; the rate of their full pay being ten shillings a day, and that of their half pay five shillings a day, subject to the usual deductions.

'IV. The pay borne on the establishment for the surgeons of our regiments of regular infantry, shall be increased to the same rate as that now allowed to the surgeons of cavalry, viz. eleven shillings and fourpence a day, nett: and in the infantry, as well as in the cavalry, the surgeon shall be required to keep a horse at his own expense, to enable him the better to perform his regimental duty. The half pay of regimental surgeons, both of cavalry and infantry, shall be increased to six shillings a day, subject to the usual deductions.

'Every regimental surgeon of our regular forces, after seven years service as such, or ten years service with our army in the whole, in a medical capacity, on full pay, shall have his pay augmented to fourteen shillings and one penny *per diem*, nett; but is not to be entitled on that account to any additional half pay when reduced.

'Every regimental surgeon of our regular forces, after twenty years service with our army in the whole, on full pay, shall have his pay augmented to eighteen shillings and tenpence a day, nett, and shall have a claim to retire on half pay at the before mentioned rate of six shillings a day; but if the cause of his retirement be ill health contracted in the service, and shall be so certified by the army medical department, the rate of his half pay on retiring after the above length of service, shall be ten shillings a day, subject to the usual deduction.

'Every regimental surgeon of our regular forces, after thirty years service with our army in the whole, on full pay, shall have the unqualified right of retiring on half pay at the rate of fifteen shillings a day, subject to the usual deduction.

'The widows of regimental surgeons of our regular forces, permitted to retire after twenty years service on full pay, shall not be precluded from the pension on account of the retirement of their husbands.

'The pay of the surgeons of our Militia corps, when embodied, shall be increased, as in the line, to eleven shillings and fourpence a day: and the Militia surgeons shall be under the same obligation to keep a horse.

'V. The full pay borne on the establishment for the surgeons to our forces, shall be increased to fifteen shillings a day; and their half pay to six shillings; subject to the usual deductions.

'Every surgeon to our forces shall derive the same advantages as a regimental surgeon, from completing the respective terms of twenty and thirty years service on full pay, as above specified.

'VI. The physicians, purveyors of hospitals, and deputy purveyors of hospitals, to our forces, shall remain in all respects on the same footing as at present.

'VII. The full pay annexed to the appointment of deputy inspector of hospitals to our forces, shall be twenty-five shillings a day, and the half pay twelve shillings and sixpence; subject to the usual deductions. But, after twenty years service with our army in the whole, on full pay, a deputy inspector of hospitals shall have a claim to full pay at the rate of thirty shillings a day; and to half pay at the rate of fifteen shillings a day; subject to the usual deductions.

'VIII. The full pay annexed to the appointment of inspector of hospitals shall be two pounds a day, and the half pay one pound a day; subject to the usual deductions.

'The several appointments undermentioned, shall be hereafter discontinued in our service, as superfluous and embarrassing, and holding out the idea of distinctions in rank and duty not easy to be defined, viz.

Field inspector.
Assistant inspector.
Deputy inspector general.
Inspector general.
Superintendant general.

'Given at our Court at Saint James's, this 22d of May 1804, in the 44th year of our reign.

By his Majesty's command. W. DUNDAS.'

An Account of the Diseases which have been treated at the Public Dispensary, Carey-Street, from November 30th 1804, to February 28th 1805. By THOMAS BATEMAN, M. D.

ACUTE DISEASES.

	No. of Cases.		No. of Cases.
Tertiana - - - - - -	1	Cynanche Tonsillaris - -	8
Scarlatina - - - - - -	1	Rheumatismus - - - - -	3
Variola - - - - - - -	1	Podagra - - - - - -	1
Ophthalmia - - - - - -	7	Pertussis - - - - - -	1
Hydrocephalus - - - - -	2	Hysteritis (*post partum*) -	3
Pneumonia - - - - - -	10	Febris Infantum - - -	5
Catarrhus - - - - - -	86		

CHRONIC DISEASES.

	No. of Cases.		No. of Cases.
Hemicrania - - - - - -	3	Hysteria - - - - - -	3
Cephalæa - - - - - - -	5	Hæmatemesis - - - - - -	1
Hæmoptysis & Phthisis - -	36	Epilepsia - - - - - -	1
Chronic Catarrh & Dyspnœa	69	Hemiplegia - - - - - -	2
Asthma - - - - - - -	8	Rheumatismus Chronicus -	37
Dyspepsia - - - - -	39	Lumbago - - - - - - -	8
Asthenia - - - - - - -	16	Anasarca - - - - - - -	2
Icterus - - - - - -	1	Hydrothorax - - - - -	3
Hepatitis chronica - - -	3	Ascites - - - - - -	3
Enterodynia - - - - - -	4	Tympanites - - - - - -	1
Verminatio - - - - - -	16	Scrofula - - - - - - -	2
Diarrhœa - - - - - - -	8	Hæmorrhois - - - - - -	6
Dysenteria - - - - -	1	Impetigo - - - - - - -	7
Nephralgia - - - - - -	3	Scabies - - - - - - -	7
Dysuria Calculosa - - -	2	Psoriasis - - - - - - -	3
Catarrhus Vesicæ - - -	1	Lichen - - - - - - -	2
Amenorrhœa - - - - -	10	Intertrigo - - - - - -	1
Menorrhagia - - - - - -	6	Porrigo - - - - - - -	2
Leucorrhœa - - - - -	5	Aphthæ - - - - - - -	4

During the latter part of December, and a great part of January, the weather was exceedingly cold, with a constant north-east wind, except that there were two sudden vicissitudes, accompanied with rain and a transient thaw. From that time to the middle of February, the temperature was moderately cold, the nights only being frosty. At present it is regular and mild.

At the time of the second thaw, the catarrhal complaints increased considerably; and almost all the instances of Pneumonia occurred in January. These chiefly assumed the character of peripneumonia, and were attended with symptoms of debility, rather than of acute inflammatory excitement. In some cases, delirium was one of the first symptoms; and the patient complained more of headach, general uneasiness, and pains in the back and limbs, than of the cough. As the disease advanced, the cough became troublesome, the respiration difficult; an obtuse wandering pain was felt in the chest, and the voice was much impaired; the tongue was brown, and much furred; the pulse above 100, and feeble; but the strength was not severely depressed, as in Typhus. In one case, the patient died on the fourth day, with the symptoms just enumerated; and, on examination after death, both lobes of the lungs were found of a dark purple colour, especially at the upper and back part; and resembled the appearance of the liver, rather than of the healthy lungs, the bronchial cells being filled with effused blood. In general, the disease yielded to blisters, with diaphoretics. Blood-letting on the one hand, and a cordial treatment on the other, were contraindicated by the two opposite sets of symptoms; but, in these unfortunate combinations, experience rather warrants an approximation to the cordial treatment of Typhus, than to the debilitating remedies of Pneumonia.

Most of the other modifications of Catarrh showed a tendency to debility; and there were few instances of high excitement. A comparatively small number of cases of Acute Rheumatism have occurred; but several of the mild febrile Catarrhs were attended with great general pains of the back and limbs, which, however, were removed in a few days by slight anodynes, together with diaphoretics and diluents.

It is remarkable, that scarcely an instance of any contagious disease is at present to be found in this district. No case of Typhus has occurred, and only one of Small-Pox, of Scarlet-Fever, and of Hooping-Cough; though this is the season in which all these diseases are usually prevalent.

Ophthalmia has been to a certain degree epidemic, though it has not come very frequently under the notice of Dispensaries. It has been remarked to make its attack suddenly, as if a mote had fallen into the eye; the inflammation rapidly increasing, and the palpebræ becoming much swelled. In many cases it has almost as suddenly subsided, with little or no remedy; and, in several, it has at the same time attacked the other eye. It has, in many instances, subsided so rapidly, that no remedy was sought for. Whether this rapidity of its progress is the cause of its being little seen at public institutions, or whether the lower classes have been nearly exempt from it, I have not been able to ascertain.

Feb. 28. 1805.

Extract of a Letter from Mr Barlow, Surgeon, Blackburn, Lancashire.

Every practitioner knows the difficulty there is in keeping the hair of the scalp in, Tinea Capitis, sufficiently close cut or shaved, to give time adequate for the healing of the diseased parts. The intractableness of most children under these circumstances, when attempted to be controlled or governed by the accustomed mode of treatment, renders the disease, in most instances, very difficult to subdue. It is from a failure, under the various means which have been recommended by authors in this obstinate malady, that led me, if possible, to adopt a more easy and certain remedy; and I am happy to announce, that, by washing the affected head a few times, morning and evening, with the subjoined lotion, and suffering the parts to dry without interruption, the scabs will decorticate and peel off from the scalp, and leave the part underneath perfectly healed; and this, without either shaving the head or cutting off the hair. This application I have invariably found to answer (when duly applied) both in children and adults, and in many inveterate cases, even where every other means had been previously used without effect, some of which were of several years standing.

℞ Kali Sulphurat. (recens præparat.) ʒiij.
Sap. Alb. Hispan. ʒj.
Aq. Calcis ℥viij.
Spir. Vinos. Rect. ʒij.
M. ft. Lotio pro Tinea Capitis.

Antivariolous Power and Progress of Vaccination.

It is undoubtedly to be regretted, that small-pox should have occurred, even in a single instance, in which vaccination seemed to have taken full and complete effect. But, since the cow-pock, or, at least, apparently perfect cow-pock is not an universal preventive of small-pox, we are decidedly of opinion, that that inconsiderate zeal which will not permit itself to be convinced, but continues to be deceived and to deceive others, is fraught with infinitely greater dangers than any which could have arisen from false or unnecessary alarms. The community is, therefore, under obligations of the strongest kind to those gentlemen who, in defiance of popular odium, illiberality and prejudice, have dared to disclose an unpleasant truth, and have endeavoured, by experimental investigation, to ascertain how far our confidence in the antivariolous powers of vaccination are to be limited; what are the circumstances which counteract these powers; and by what criterion we may be enabled to judge, if vaccination has afforded a permanent security against small-pox. Several curious facts have been already ascertained in the course of this investigation, which promise to elucidate, not only the anomalies which have been observed in cow-pock, but the modifications of which exanthematous diseases in general are susceptible.

1. Dr De Carro of Vienna ascertained, that cow-pock matter was capable of producing a local disease in persons who had previously been affected with small-pox; that matter taken from this source communicated a similar local disease, but that it never afforded any security against small-pox.

2. Dr Jenner pointed out another cause of the failure of vaccination, in the herpetic eruptions which are so common among the children of the poor. The pustule produced in this case, generally arrives at maturity, and finishes its progress within the period of the true cow-pock. It commences with a troublesome itching, and throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a hue as the other, resembling more a common festering of the skin. The colour of the pustule is yellow, and the contents opaque. This disease is also capable of propagating its like, but is not preventive of small-pox.

3. Dr Pearson, to whose indefatigable exertions we owe much of our knowledge of the phenomena of cow-pock, has read, at the Vaccine Institution, an interesting memoir on the late failures. After showing that they are principally to be ascribed to the neglect of practitioners to become better acquainted with the vaccine infection, he took notice of the best authenticated cases which had come to his knowledge. He then endeavoured to prove, that the susceptibility of small-pox was totally destroyed by going through the cow-pock, and that the human constitution was equally unsusceptible of undergoing the cow-pock twice as the small-pox. As,

however, we are not yet acquainted with the characters by which we can certainly say that the desired change in the constitution by the cow-pock has been effected, it is still necessary to employ a test or counter proof. For this purpose, Dr Pearson proposed the reinoculating with vaccine matter rather than with variolous matter, which is on so many accounts objectionable.

To us, the propriety of Dr Pearson's proposal seems to be indubitable; and we gladly seize this opportunity of strongly recommending to vaccinators in general, to give a fair trial to the manner of employing this test of reinoculating with vaccine matter, discovered by Mr Bryce, and confirmed by extensive experience at the Public Dispensary of Edinburgh. He tells us (p. 207.), that his observations lead him to conclude, that, in order to obtain the proposed criterion in the greatest perfection, a second inoculation should be made with matter taken from the pustule produced by the first, between thirty-six and forty-eight hours before the areola of the first inoculation begins to appear, which will commonly be about the end of the fifth or beginning of the sixth day from the first inoculation. Now, if the progress of the second inoculation be so much accelerated about the time when the general affection of the system usually takes place, as to have an areola formed within a few hours, and very soon after the first, and increasing and fading nearly at the same time with it, it may, according to Mr Bryce, be considered as a certain mark of a constitutional affection; but, if the second inoculation proceeds through all the stages, and has all the duration of a primary affection, it is to be concluded, that no constitutional affection has taken place from the first; the second inoculation must, in this case, be regarded as a primary affection, and a third puncture made according to the plan laid down for the second; and thus we should go on until the proper test be obtained, or until we be satisfied that the constitution completely resists the action of cow-pock.

4. Vaccination has now been practised a sufficient length of time to entitle us to look for a proof of its beneficial effects, in reducing the number of deaths from small-pox. The Physicians of the Vaccine-pock Institution, in their Report to the Governors for 1803, alluding to this expectation, are of opinion, that it has not yet been fulfilled, owing to vaccination being still but partially adopted, and chiefly by those who would have inoculated for the small-pox, which leaves the same proportion for natural small-pox as before. According to them, the bill of mortality, of London, reports 1202 to have died in 1803, whereas 1111 died in 1799, 1040 in 1795, and only 522 in 1797; and, although the deaths have been greater in the intermediate years, still 1202 is not much less than the annual average during any five years for the last half

century. On the contrary, the Royal Jennerian Society, in their report for 1804, point out the remarkable decrease of deaths from small-pox during that year, in the following comparative view, extracted from the bills of mortality.

January 1803	—	181	1804	120
February	—	121	—	77
March	—	95	—	44
April	—	61	—	38
May	— —	69	—	88
June	—	48	—	29
July	—	50	—	35
August	—	67	—	27
September	—	85	—	33
October	—	64	—	50
November	—	152	—	45
December	—	180	—	50
	Total	1173	Total	586

This decrease will appear still more important, when compared with the annexed statement of deaths by small-pox, for fifty years, within the bills of mortality, averaged by ten years.

From 1750 to	1759	—	19,642
1760	1769	—	24,435
1770	1779	—	22,039
1780	1789	—	17,121
1790	1799	—	17,685
		Total	100,922

Making an annual average of 2018 deaths per small-pox in fifty years.

The following is an annual statement of deaths in the present century.

1800	—	2409
1801	—	1461
1802	—	1579
1803	—	1173
1804	—	586

The knowledge of these facts, it is hoped, will be strongly promotive of the beneficial practice of vaccine inoculation, it appearing that the fatal disease of small-pox has progressively declined, as the inestimable discovery of Dr Jenner has been introduced.

The benefits of vaccination have at last been extended to almost all the British colonies and settlements. A most interesting report of the progress of vaccination in Bengal has been published there, and reprinted in London, by Mr John Shoolbred, superintendant general of vaccine inoculation. The number inoculated in that government, up to the end of 1803, was 4,456; in the Presidency of Madras, no less than 145,840 were vaccinated previously to the 30th April 1804; and, in Ceylon, 21,000, previously to the 13th of the same month. It has also been introduced into the isles of France and Bourbon, and into Sumatra. It is perhaps not uninteresting to remark, that the vaccine matter with which all India has been supplied, was not originally derived from Great Britain; but was taken directly from cows in Lombardy, by Dr Sacco, and sent from Vienna, by Dr De Carro, to Bagdad, from which it went by different stages to Bussora and Bombay.

Colonel Crichton's Car for conveying Sick and Wounded Troops.

Plate III. fig. 2.

Lieutenant-Colonel Crichton has successfully directed his mechanical genius, already well known, by his invention for the speedy conveyance of troops, to another similar, and, in our opinion, much more useful purpose, the safe and easy conveyance of wounded and sick troops. It is formed of a lower frame *a a a*, made of ash or elm, 7 feet long, and 5 feet 4 inches broad, and an upper elastic frame *c c c c*, made of the best ash, remarkably clean and well seasoned, thick in the middle, and tapering towards the ends. The upper frame is supported in the centre of each of its long sides by a strong pillar of wood *d d*, bound by two circular pieces of iron; and on each of its ends are fixed two strong iron hooks *g g g g*; from which a cot *e e*, as represented in the plate, or two hammocks, may be suspended. It is also surmounted with four semicircular hoops, over which a cover may be thrown, to protect the patient from the weather.

When this machine is to be used, one or two sick or wounded men being previously laid in the cot, or in two hammocks, the frame is to be placed over them, and the ropes at the head, and then those at the feet are to be hooked up. The frame may now be carried by the four handles *b b b b*, by four men, to a cart or baggage waggon of the same size, or larger than itself, to which it is to be firmly bound by ropes, and the whole machine is ready to move. When the sick are to be taken from the baggage cart, the whole frame is to be lifted at once, and carried to the hospital; the bed is then placed on a bedstead, or where it is to remain, unhooked first at the feet, and then at the head, and the frame taken away. Upon large English waggons two or three of these frames may be conveniently placed.

The utility of this contrivance is apparent. Being suspended by ropes, its horizontal motions are performed by swinging; and the elasticity of the upper frame, from which the bed is suspended, renders its vertical motions scarcely less easy. We have seen contrivances in French surgical authors for conveying wounded men; but they all had the radical defect of being adapted only to the wounded limb, while the body was not protected against the jolting of the carriage; and it was necessary to move the patient from and to bed. In consequence of the frequent accidents which happen in large and manufacturing towns, a frame of this sort, with one or two cots fitted to it, would be an useful appendage to every hospital. It is already introduced into the Infirmaries of Edinburgh and Dundee.

Singular Variety of Hernia.

At a meeting of the Royal Society of Edinburgh, on the 7th March 1803, 'Mr Russel read an account of a singular variety of Hernia which occurred to him while he was delivering Clinical lectures in conjunction with Dr Brown and Mr Thomson. Mr Thomson dissected the parts with great care and accuracy, and discovered certain peculiarities, which makes the knowledge of this variety a real addition to the pathology of the disease. It is a modification of Inguinal Hernia. But as the circumstances of difference are constant and essential, it may fairly be regarded as a distinct species. In the common cases of inguinal hernia, the viscera which are to form the protrusion enter the upper and internal orifice of the abdominal ring, along with the spermatic cord, accompany the cord through the whole length of the passage, and come out along with it at the inferior and external orifice of the ring. Thus the hernia is formed by the dilatation of a natural passage. But in this new and hitherto undescribed variety, the viscera burst through the common parietes of the abdomen, exactly opposite to the lower and external orifice of the ring, where they come into contact with the spermatic cord, and descend along with it directly into the scrotum. This hernia, therefore, resembles a ventral hernia in its commencement, by beginning to protrude where there is no natural opening; and it resembles an inguinal hernia, by passing through the lower and external orifice of the abdominal ring, where the protrusion of the common inguinal hernia is completed. Thus, it is a hernia of a mixed nature, forming an intermediate species, between a simple and pure ventral hernia, and the common and perfect inguinal hernia.

Another essential circumstance respects the position of the hernia, with regard to the course of the epigastric artery. In ordinary cases of inguinal hernia, the epigastric artery runs on the inside of the hernia; but in this variety it constantly runs on the outside. This leads to some important considerations in practice, though Mr Russel did not enter fully into the applications of the peculiarities, either to practical points, or to the explanation of various curious circumstances in the history of hernial swellings.' —*Transactions of the Royal Society, vol. V. History, page* 23. *4to. Edinburgh.* 1805.

Intended Medical Publications.

There are now no less than three periodical works published, for the purpose of diffusing medical knowledge in America. The Medical Repository, edited at New York by Drs MITCHELL and MILLER: The Philadelphia Medical Museum, by Dr J. R. COXE: And the Philadelphia Medical and Physical Journal, by Professor B. SMITH BARTON, M. D. Of each of the two last, which were only begun in 1804, we have received the first Number; but of the former, there are six volumes in this country. They contain much interesting information, particularly regarding the Yellow Fever, of which we shall give an extract in a future Number.

The Croonian Lecture on Muscular Motion was lately read to the Royal Society by ANTHONY CARLISLE Esq. F. R. S. In this inquiry, the author has adduced many original experiments on several important points; on the cohesive attraction of muscular parts; on the connexion between muscular motion and the vascular, respiratory, and nervous systems. Various facts and experiments were related on the effects of temperature, illustrated by remarks on cold-blooded animals, and experimental inquiries respecting those animals which become torpid during the winter season. The whole of this lecture is extremely important and interesting; it displays profound research and philosophical induction. As soon as the Philosophical Transactions are published, that part of them at least in which this paper is inserted, we shall direct more particular attention to this valuable communication.

The public will be gratified to hear, that another part of Dr WILLAN's valuable work on Cutaneous Diseases is just published. It constitutes the first part of the third order, and will include the description of *Measles* and *Scarlet-Fever;* two of the most important diseases of the skin.

Dr HAYGARTH is engaged in collecting a Clinical History of Diseases, deduced from his own personal observation and experience. Part I. will include the Clinical History of Acute Rheumatism; and Part II. a Clinical History of the Nodosity of the Joints. As the learned author has been for some time arranging his materials, this work may soon be expected to appear.

Dr STOCK (of Bristol) will shortly publish a work, entitled, 'Medical Collections of the Effects of Cold as a Remedy in certain Diseases.'

Dr **Clutterbuck** has announced his intention of publishing an Inquiry into the Seat and Nature of Fever, as deducible from the Phenomena of the Disease, and the Principles of the Animal Economy. This was the subject of his inaugural dissertation.

Mr **Blair**, surgeon of the Lock Hospital in London, is on the eve of publishing an English Translation from the fourth edition of Dr Girtanner's Treatise on the Lues Venerea, which will be illustrated by copious notes, critical, historical, and practical.

Mr **Blair** has likewise announced his intention of publishing an extensive system of Medical and Operative Surgery, comprising the latest improvements in theory and practice; to be accompanied by numerous engravings, which are in a considerable state of forwardness. This work will be comprehended in about six octavo volumes, of which the *first* is expected to be printed very soon. We are authorized to contradict a report lately circulated, of Mr Blair having abandoned the design of completing this system, and to assure our readers that there will be no unnecessary delay in rendering the successive volumes fit for the press.

Sir **John Sinclair**, Bart. has in the press an extensive work on Longevity, which will contain much curious and important information on this interesting subject.

Mr **Benjamin Bell** of Edinburgh has announced his intention of publishing a Treatise on Strictures of the Urethra, principally with the view of exposing the bad consequences arising from the use of Bougies armed with Caustic.

Mr **John Bell** has the second volume of his magnificent work, 'The Operations of Surgery,' in a state of very considerable forwardness. It will contain, 1st, The Anatomy of the Parts within the Pelvis, the Operations of Lithotomy, and the Cure of Stricture, Fistula, &c.; the Anatomy of the Cranium, Practical Observations deduced from that part of Anatomy, with Dissertations on the Effects of Fracture, Necrosis, Caries, and other Diseases of the Skull; on Tumours from without affecting the Brain, and Tumours of the Dura Mater, making their way through the Cranium; the Characters and Distinctions of all the Tumours of the Head, with Rules of Practice.—2d, The Anatomy and Pathology of the Brain; its Structure and Diseases Described; its various Influences over the Mind and over the Body; on the Intellect; on Organic Actions; and on Sensation, ascertained: With Dissertations on Apoplexy, Palsy, Hydrocephalus, and Madness; displaying the Analogies of Internal Diseases with External Injuries; and concluding with Rules of Practice; Rules for giving immediate assistance in Apoplectic and Paralytic Strokes, and in Maniacal Paroxysms; and Rules for Prevention, by regulating the general condition of the system.

We continue to receive, though irregularly, several of the foreign journals, from which we shall from time to time extract, for the information of our readers, whatever may appear new, or particularly interesting.

The articles we had prepared for this Number are postponed for want of room.

M. ALIBERT, physician to the hospital of Saint Louis at Paris, has announced proposals for publishing a large and splendid work on the Diseases of the Skin, comprehending a description of these disorders as they are met with at the hospital of Saint Louis, and an account of the best mode of treating them. This work is to be published in folio numbers, with coloured plates. One number to be delivered every four months, price two guineas. The first number to be ready on the 1st of March.

The following publications have lately been imported from the Continent.

Coup d'Oeil sur les Révolutions, et sur la Réforme de la Médécine. Par P. J. G. CABANIS, Membre du Senat Conservateur, de l'Institut National, de l'Ecole de Médécine de Paris, &c. &c. 8vo. pp. 438. A Paris. An XII. 1804.

Ricordi dell' Anatomia, Chirurgia, &c. Records, Anatomical and Chirurgical, respecting the Head and Neck. Collected by VINCENZO MALACARNE. 2 vol. 8vo. Padua.

Œuvres de Pierre Camper, &c. *i. e.* The Works of Peter Camper, relating to Natural History, Physiology, and Comparative Anatomy. 3 vol. 8vo. with folio Atlas of Plates. Paris, 1803. Imported by De Boffe.

TO CORRESPONDENTS.

We would gladly comply with the desire of a *Country Practitioner*, that we should mention the price of the Books we notice; but it would subject us to advertisement duty.—Communications should be addressed to the EDITORS of the EDINBURGH MEDICAL and SURGICAL JOURNAL, to the care of Messrs CONSTABLE & Co. Edinburgh; LONGMAN, HURST, REES, ORME & BROWN, London; or JOHN CUMMING, Dublin. The Engraving of the Dissection of M. A. Cooper's case will be given with the next Number, as it was accidentally destroyed after it was almost finished.

No. III. will be published on Monday, 1st July.

THE

EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

JULY 1. 1805.

PART I.

ORIGINAL COMMUNICATIONS.

I.

Eſſay on the Analyſis of Animal Fluids, principally with the View of aſcertaining their definite Characters. By JOHN BOSTOCK, M.D. Liverpool.

THE preciſion which the analyſis of mineral and vegetable ſubſtances has obtained, does not appear to be yet extended to the products of the animal kingdom. This remark may be applied both to the ſolids and fluids which compoſe the animal body; but it is the moſt applicable to the latter claſs of ſubſtances. The terms ſerous, mucilaginous, gelatinous, &c. are employed, even by the moſt eſteemed medical and phyſiological writers *, in a vague and indeterminate manner, without attending either to the original import of the words, or to the reſtricted meaning which it is neceſſary to impoſe upon popular expreſſions, when they are adopted in ſcientific reſearches. The object of the preſent paper is to aſcertain a definite character for what I propoſe to call the primary animal fluids, and to diſcover accurate and delicate teſts, by which their preſence may be eaſily and certainly indicated. By primary fluids †, I mean thoſe into which the compound fluids exiſting in the animal body are ca-

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* Even Mr Abernethy, in his late valuable work on tumours, speaks of the gelatinous part of the blood, where I conceive, from the context, there can be no doubt that he intended to designate the fibrine.

† All the animal fluids, both primary and compound, are merely solutions of a solid body in water; but those substances which are the most frequently seen in a state of solution have very generally obtained the title of fluids.

pable of being reſolved by the application of different reagents, without decompoſing them into their ultimate elements.

ALBUMEN.

The firſt of the animal fluids, which I propoſe to make the ſubject of my inveſtigation, is the albumen. With the exception of water, no fluid appears to enter ſo largely into the compoſition of the animal body: it forms a very conſiderable proportion of the blood, and is found in greater or leſs quantity in nearly all the ſecretions. It is alſo capable of aſſuming the ſolid form, and in this ſtate it conſtitutes the baſis of all the membranous ſubſtances, which are ſo extenſively diſperſed through every part of the ſyſtem: it compoſes the cellular tiſſue into which the earth of the bones and the fibrous matter of the muſcles are depoſited, while it enters largely into the ſtructure of the ſkin, the glands, and the veſſels. At preſent, however, we ſhall direct our attention to it while in the liquid form.

In order to obtain it in a ſtate of purity, I had recourſe to the white of the egg, a ſubſtance to which the name of albumen was originally applied, and which is ſtill conſidered by the moſt eminent chemiſts as compoſed entirely of this ſubſtance *. In order to aſcertain how far this opinion was correct, I kept a quantity of the white of the egg in a temperature of 212°, until it was firmly coagulated. It was then cut into ſmall pieces, and placed in the upper part of a narrow-necked funnel, when a few drops of a browniſh, viſcid fluid were ſeparated from it. Other pieces of the ſame coagulum were kept for ſome time in boiling water; the fluid being then paſſed through a filter had acquired a light browniſh colour and a faint odour; when agitated, it was ſlightly mucilaginous. By ſlow evaporation, a ſmall quantity of a brittle ſemi-tranſparent ſubſtance was obtained. It appeared therefore evident, that the white of an egg contains a ſmall quantity of a ſubſtance incapable of coagulation, and therefore eſſentially different from albumen; I ſtill, however, continued to employ it for the purpoſe of aſcertaining the properties of albumen, as it affords this ſubſtance in a ſtate of greater purity than it can be procured from any other ſource.

It was an object of ſome importance to aſcertain the proportion which this foreign ingredient bore to the albumen itſelf. A hundred grains of firmly coagulated albumen were kept for ſome time in boiling water, and this being poured off, a freſh quantity was added, and this proceſs repeated, until the water appeared to retain

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[*] Hatchett, Phil. Trans. 1800. p. 375.
Thomſon's Chemiſtry, vol. iv. p. 431.

retain no farther impregnation. The whole of the fluid was then evaporated, and a reſiduum was left which amounted to $4\frac{1}{2}$ grains. Beſides the admixture of this peculiar ſubſtance, the white of the egg contains a conſiderable quantity of water, not only in its liquid ſtate, but after it is coagulated. By a gentle heat the water may be evaporated, and the ſolid matter is left behind in the form of a hard, brittle, tranſparent ſubſtance. I here found that, upon an average, 4-5ths of recently coagulated albumen may be conſidered as conſiſting of water. Hence it will appear, that 100 grains of the white of the egg conſiſt of 80 grains water, 4.5 grains of uncoagulable matter, and 15.5 grains only of pure albumen.

The moſt diſtinguiſhing characteriſtic of albumen is the property of being coagulated by heat; a circumſtance which forms an obvious and eaſy teſt of its preſence, when it exiſts in a compound animal fluid in any conſiderable proportion. In order to aſcertain how ſmall a quantity of albumen could, by this means, be rendered viſible, I added 13 grains of the white of the egg to 87 grains of water, and thus formed a ſolution, one grain of which contained $\frac{1}{50}$ grain of pure albumen. Five grains of this ſolution were then added to 95 grains of water; ſo that 100 grains of the fluid contained only $\frac{1}{10}$ grain, or $\frac{1}{1000}$ of its weight of pure albumen. This was expoſed to the heat of boiling water, and a perceptible opacity was produced in the fluid.

The effects of the oxymuriate of mercury were next tried. One drop of a ſaturated ſolution of this ſalt, added to 100 grains of water, containing $\frac{1}{1000}$ of its weight of albumen, produced a very evident milkineſs; after ſome hours, a curdy precipitate ſeparated and fell to the bottom. A ſolution of half this ſtrength, containing only $\frac{1}{1000}$ of its weight of albumen, was then tried by the ſame reagent, and, even in this inſtance, a ſufficiently obvious effect was produced.

The nitro-muriate of tin is a powerful coagulator of albumen in its unmixed ſtate; but I found it not to be ſo delicate a teſt as the oxymuriate of mercury. A hundred grains of water, containing $\frac{1}{5}$ grain of albumen, *i. e.* $\frac{1}{500}$ of its weight, was not affected by this reagent until after ſome hours, when the fluid exhibited a degree of milkineſs.

In order to aſcertain the effects of tan upon albumen, I macerated half an ounce of powdered galls in half a pint of water for ſome hours, and filtered the fluid. A deep brown, tranſparent liquor was produced, 100 grains of which I found, by evaporation, to contain $2\frac{1}{2}$ grains of ſolid reſiduum. Equal parts of this preparation of galls, and of a ſolution of albumen, in the proportion of one part to 1000 parts of water, were mixed together; at firſt no effect could be perceived; but, after ſome hours, an evident precipitate was formed, which ſubſided ſlowly.

The aqua lithargyri acetati, or extract of goulard, is an active precipitant of ſeveral animal fluids; when dropped into a ſtrong ſolution of albumen ovi, a very copious and denſe precipitate is immediately formed. It is, however, ſomewhat difficult to determine how far this effect depends upon the albumen itſelf, as goulard has been conſidered to be the appropriate teſt of the uncoagulable part of the blood, which, it may be ſuppoſed, reſembles the uncoagulable part of the white of the egg. The aqua lithargyri acetati is likewiſe decompoſed by ſeveral of the ſaline bodies, which are found to exiſt in almoſt all the animal fluids. I have ſometimes known it to yield a precipitate, even when added to diſtilled water; and, in all caſes, after expoſure to the atmoſphere for a few hours, the water to which it has been added becomes turbid, and is covered with a thin film. In order to try the effect of this reagent on albumen, I added one drop of it to 200 grains of water, and, upon obſerving that the tranſparency of the fluid was not affected, a ſingle drop of the ſolution of albumen, of the ſame ſtrength as that mentioned above, was added. It formed a denſe precipitate as it fell through the fluid, and, upon agitation, the whole was rendered ſlightly opake. In this caſe, the proportion of the water to the albumen was as 10,000 to one; to the uncoagulable part of the white of the egg it would be about as 30,000 to one.

The next reagent which I employed was the nitrate of ſilver. A ſingle grain of a ſaturated ſolution of this ſalt produced an immediate turbidneſs in 100 grains of water, containing $\frac{1}{10}$ grain of albumen; and, after ſome hours, a ſmall quantity of a curdy precipitate fell to the bottom of the veſſel. It might, however, be ſuſpected that, in this caſe, the effect produced depended upon a quantity of the muriate of ſoda contained in the albumen. I found that 100 grains of water, containing only $\frac{1}{100000}$ grain of common ſalt was rendered evidently turbid by one drop of the nitrate of ſilver *; but the muriate of ſilver, which is produced in this caſe, is in the form of a grey powder, and ſubſides more rapidly

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* I weighed, very exactly, a grain of ſalt, and diſſolved it in 200 grains of water; one grain of this ſolution was afterwards added to 99 grains of water, and, by repeating the operation for three ſucceſſive times, I obtained 100 grains of water, containing only $\frac{1}{10000}$ of its weight of ſalt I then took 99 grains of diſtilled water, and poured into it one drop of the nitrate of ſilver; after waiting for ſome time, until I was ſatisfied that no effect would take place, I added a ſingle drop of the laſt ſolution of ſalt; thus making it $\frac{1}{100000}$ part of the mixture; a faint but perceptible opacity was almoſt immediately produced.

pidly than the precipitate did in the former inſtance, where it produced a white, flaky ſubſtance.

I found that a ſolution of albumen, of the ſame ſtrength with that employed in the laſt experiment, was immediately decompoſed by the nitro-muriate of gold. One drop of this metallic ſolution inſtantly produced a denſe, white precipitate, in 100 drops of water, containing only $\frac{1}{10}$ of a grain of albumen.

Albumen, in a concentrated ſtate, is powerfully coagulated by alum: I found, however, that this reagent is not ſo accurate a teſt of its preſence, when in a diluted ſtate, as ſome of thoſe which I had already employed. One-fifth of a grain of albumen, diſſolved in 100 grains of water, was indeed rendered ſlightly turbid by the addition of a few drops of a ſaturated ſolution of alum; but no precipitate was formed. Before I conclude my account of theſe experiments, I muſt obſerve, that the ſtrength of the ſolution of albumen was, in all caſes, rather leſs than my eſtimate. When I added the albumen to the water, a ſmall portion of it always remained inſoluble, and this was ſeparated from the fluid by filtration, before the experiments were performed. This inſoluble part I ſuppoſed to conſiſt of the membranous matter, with which it is ſaid that the white of the egg is interſected The quantity was indeed almoſt too ſmall to be appreciated; but where it is deſirable to attain as much accuracy as poſſible, I think it neceſſary to mention every circumſtance which may in the ſmalleſt degree affect the reſult.

The experiments related above will, I conceive, indicate, with a ſufficient degree of accuracy, the preſence of albumen as a conſtituent in an animal fluid. The property of being coagulated by heat is a characteriſtic of this ſubſtance, which will always ſerve as a mark of diſcrimination; and we have found that this property is not deſtroyed by dilution with 1000 times its weight of water. This, therefore, may be conſidered as a teſt of its preſence, minute enough for all practical purpoſes. We have alſo found that there are ſeveral reagents which poſſeſs the power of precipitating it from its ſolution in water, while exiſting only in the ſame proportion. It will, however, be neceſſary to obſerve their operation upon the other animal ſubſtances, before we can determine their uſe in the analyſis of compound fluids.

JELLY.

The next ſubſtance which I propoſe to examine is jelly. The peculiar characteriſtic of this body is its property of becoming concrete by cold, and being liquified by the application of a gentle heat. It enters into the compoſition of the blood, though leſs largely than the albumen: it is alſo an ingredient in the ſkin, membranous texture, ligaments, cartilages, and tendons. By boiling, it is eaſily extracted from theſe ſubſtances, and, by evaporation and cooling, the whole is reduced to a maſs of greater or leſs ſolidity, in proportion to the previous degree of concentration. Iſinglaſs, which is prepared from the inner membrane of the ſwimming bladder of the ſturgeon, has been conſidered as conſiſting of jelly, nearly in a ſtate of purity. I employed it for the following experiments.

Four grains of iſinglaſs were diſſolved in 200 grains of water, and thus a ſtandard fluid was formed, one grain of which contained $\frac{1}{10}$ of a grain of jelly. This ſolution became perfectly concrete by cooling. In the firſt place, I wiſhed to aſcertain how ſmall a proportion of jelly diſſolved in water was capable of aſſuming the concrete ſtate. Equal weights of the ſtandard fluid and of water, *i. e.* one part of jelly to 100 parts of water, produced a compound which was completely ſtiffened by cooling; but I found that two parts of water, and one of the ſtandard, *i. e.* one part of jelly to 150 parts of water, produced a compound, which, though evidently gelatinous, did not aſſume the concrete form.

One of the moſt active precipitants of jelly is the tanning principle. I found that a mixture of five grains of the ſtandard ſolution, and 95 grains of water, produced a copious precipitate, when added to an equal quantity of an infuſion of galls, of the ſame ſtrength with that employed in the experiments upon albumen. In this inſtance, the jelly was to the water as one to 1000. I afterwards reduced the quantity of jelly until it compoſed $\frac{1}{1003}$ part only of the ſolution, and, in this caſe, a conſiderable precipitate was ſtill produced by the infuſion of galls.

A quantity of the ſtandard ſolution had a few drops of the aqua lithargyri acetati added to it; but no more effect appeared to be produced than would have enſued from mixing it with an equal quantity of pure water.

No effect was produced by adding the oxymuriate of mercury to the ſtandard ſolution. The nitrate of ſilver and the nitro-muriate of tin were each employed, and produced a very ſlight and almoſt imperceptible opacity.

The addition of the nitro-muriate of gold cauſed a ſmall quantity of a denſe precipitate, when added to the ſtandard ſolution; but when this was ſo far diluted as to contain one grain of jelly in 500 grains of water, the effect was no longer perceptible.

MUCUS.

Animal mucus, or mucilage, enters largely into the conſtitution of many parts of the body, and forms a conſiderable proportion of ſeveral of the ſecretions. The term *mucus* had been generally employed in a vague and unreſtricted ſenſe, until Mr Hatchett, in his valuable paper on the membranous parts of animals, inſerted in the Phil. Tranſ. for 1800, attempted to aſſign it a more appropriate and definite meaning. He conceives, that jelly and mucus are only modifications of the ſame ſubſtance, and do not eſſentially differ from each other; he conſiders it to be entitled to the appellation of mucus, when it is ſoluble in cold water, and cannot be brought to the gelatinous ſtate. Dr Thomſon adopts, in general, the idea of Mr Hatchett, and lays down the following as the characteriſtic properties of animal mucilage. It is ſoluble in cold water; inſoluble in alcohol; neither coagulable by heat; not generating into a jelly; precipitable by tan, and the nitro-muriate of tin. I have been induced, from the reſults of my obſervations, to form a different opinion reſpecting the relation of jelly and mucus; but I ſhall defer the ſtatement of it until I have related the experiments which have led me to diſſent from ſuch high authority.

By agitating recent ſaliva for a ſhort time in cold water, part of it was diſſolved, and, after being paſſed through a filter, was made the ſubject of experiment, being, as I conceived, a ſolution of nearly pure mucus. By a careful evaporation, I found that the water had diſſolved $\frac{1}{240}$ part of its weight.

No effect was produced by the addition of the oxymuriate of mercury, and the nitro-muriate of tin cauſed only a ſlight opacity. No effect was produced by the addition of equal parts of this ſolution and the infuſion of galls. The aqua lithargyri acetati added to the ſolution produced an immediate opacity, and, after ſome time, a white flaky precipitate fell to the bottom of the glaſs. No appearance of coagulation was produced by expoſing the ſolution for ſome time to the heat of boiling water; nor was there any tendency to gelatinize by evaporating and afterwards cooling the fluid.

I afterwards endeavoured to obtain mucus in a ſtate of purity from another ſource. For this purpoſe, an oyſter was agitated for a few minutes in a quantity of cold water; the fluid was filtered, and appeared ſlightly opake and glutinous. By evaporation, it appeared that it had diſſolved about $\frac{1}{30}$ of its weight of animal matter. A quantity of this ſolution, diluted with an equal bulk of water, was employed in the following experiments.

The oxymuriate of mercury being added to it produced no effect. The infuſion of galls, after ſome time, produced a ſlight degree of turbidneſs, and, at length, a precipitate was formed in ſmall quantity. The aqua lithargyri acetati cauſed an immediate opacity, and, after ſome time, a denſe precipitate.

Theſe experiments nearly coincide with the former. In both caſes, no effect was produced by the oxymuriate of mercury, thus proving the abſence of albumen. The ſmall precipitate produced by the galls indicated the exiſtence of only a very minute quantity of jelly. The effect was ſcarcely as great in this inſtance, where the animal matter compoſed $\frac{1}{100}$ part of the weight of the ſolution, as was produced by the ſame reagent upon a ſolution of jelly, when it compoſed only $\frac{1}{1000}$ part of the weight of the fluid. Very nearly the whole of the animal matter, therefore, probably conſiſted of mucus, the preſence of which was indicated by the goulard.

I apprehend that theſe experiments will be deemed ſufficient to eſtabliſh a decided and eſſential difference between mucus and jelly. Independent of the gelatinizing property of the latter, the effects produced upon them by the tanning principle, and by the aqua lithargyri acetati, are exactly oppoſite. Tan is a moſt delicate teſt of jelly, but does not in any degree affect mucus. Aqua lithargyri acetati is a delicate teſt of mucus, but does not in any degree affect jelly. The oxymuriate of mercury, on the contrary, which is one of the moſt accurate teſts of albumen, does not appear to be affected either by jelly or by mucus.

Albumen, jelly, and mucus, I am inclined to conſider as the only primary fluids which are diſperſed through the different parts of the body. Particular veſſels or glands contain and ſecrete particular fluids, which cannot be reſolved into other fluids without decompoſition, as the fibrine of the blood, the reſin of the bile, the urea of the kidney, &c.; but theſe are, in all inſtances, confined to their appropriate organs, and do not neceſſarily enter into the preſent inveſtigation.

From the above experiments, I think we may be enabled to lay down, with a conſiderable degree of accuracy, the leading characteriſtics of the three primary animal fluids, and to eſtabliſh teſts by which their preſence may be minutely aſcertained. The moſt remarkable property of albumen is its becoming coagulated by heat; a property which it retains ſo far as to communicate a degree of opacity to its ſolution in water, when it forms only $\frac{1}{1000}$ part of its weight. A ſolution of the ſame ſtrength has its albumen precipitated by the oxymuriate of mercury, and this teſt will indicate its preſence, when compoſing no more than $\frac{1}{2000}$ of the mixture. The tanning principle, the aqua lithargyri acetati, the nitrate of ſilver, and the nitro-muriate of gold, are all teſts of the preſence of albumen, nearly as minute as the oxymuriate of mercury; but they are leſs valuable, becauſe their effects are not confined to albumen. The nitro-muriate of tin and alum are alſo precipitants of albumen, but they are leſs delicate in their operation than the reagents enumerated above.

The peculiar characteriſtic of jelly is its property of becoming concrete by cold, and being again rendered fluid by a gentle heat, we have found that its ſolution in water retains this property when it compoſes $\frac{1}{100}$ part only of the weight of the fluid. Tan is a ſtill more minute teſt of jelly than of albumen; but jelly is not in the leaſt degree affected by the oxymuriate of mercury, and may thus, in all caſes, be eaſily diſtinguiſhed from it. No effect is produced in jelly by goulard, and ſcarcely any by the nitrate of ſilver, and the nitro-muriate of tin, when it is in a ſtate of much dilution. By means of tan, jelly may be eaſily detected in a fluid of which it forms only $\frac{1}{1000}$ part.

The properties of mucus are principally negative; it is not coagulable by heat, nor capable of becoming gelatinized; it is not precipitable either by the oxymuriate of mercury or by tan, but it may be detected with conſiderable minuteneſs by the aqua lithargyri acetati.

It appears, therefore, that the oxymuriate of mercury, tan, and the aqua lithargyri acetati, are the three moſt valuable teſts. The nitro-muriate of tin is a leſs delicate teſt of albumen than the oxymuriate of mercury, and is alſo in ſome degree affected by jelly. The nitrate of ſilver appears to be a very nice teſt of albumen; but it is objectionable in conſequence of its being decompoſed by the muriate of ſoda, a ſalt which is ſuppoſed to exiſt in moſt of the animal fluids. The nitro-muriate of gold is a delicate teſt of albumen, but it likewiſe precipitates jelly.

In the analyſis of a fluid which is ſuppoſed to contain either albumen, jelly, or mucus, the firſt ſtep is to obſerve the effect of the oxymuriate of mercury; if this produce no precipitate, we may be certain that the fluid in queſtion contains no albumen. We muſt next employ the infuſion of galls, and if this alſo cauſe no precipitate, we may conclude that the animal matter held in ſolution conſiſts of mucus alone.

I have before remarked, that the ideas which I have formed of the nature of jelly and mucus, and the relation which theſe ſubſtances bear to each other, differ conſiderably from thoſe of Mr Hatchett. It is not, indeed, without a degree of diffidence that I diſſent from ſo diſtinguiſhed a chemiſt; but I conceive that I am juſtified by the experiments related in this eſſay. Mr Hatchett, in the valuable paper to which I have already referred, ſpeaks of the white of the egg as conſiſting of pure albumen*; but I believe that, in this particular, he will be found not perfectly accurate.

There is a great reſemblance between the phyſical properties of animal mucus and vegetable gum; and I found that they ſtrongly reſemble each other alſo in their chemical qualities. A ſolution of gum Arabic, containing one grain of gum to 200 grains of water, was not affected either by the oxymuriate of mercury, or by tan. With the nitro-muriate of tin, and with the nitrate of ſilver, there was only a ſlight degree of opacity; but with the aqua lithargyri acetati there was a denſe precipitate inſtantly formed.

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* Phil. Trans. 1800, p. 375.

II.

A Memoir on the State of Health of the 88*th Regiment, and of the Corps attached to it, from* 1*ſt June* 1800 *to the* 31*ſt May* 1801, *as originally preſented to the Medical Board, Bombay*, by JAMES M'GREGOR, A.M. M.D. Surgeon H.M. 88th Regiment, and Member of the Royal College of Surgeons, *&c. &c.*

To William Sandwith, Eſq. *Secretary to the Medical Board of Bombay.*

I NOW preſent the Board with the compendium of another year's practice: it is drawn out to a greater length than that of laſt year. I have paid more attention to it, I have endeavoured to be more accurate, and, I think, have learned a little more on a ſubject of which, on coming to this country, I was entirely ignorant.

In preſenting it to the Board, I am aware that I am doing it to thoſe who are the moſt competent to judge on the ſubject: every circumſtance which I ſhall advert to they are intimately acquainted with, as well from the monthly reports, and the details of caſes and diſſections, as from inſpection of the regimental hoſpital, while the 88th regiment was ſtationed at the preſidency. The account of laſt year was brought down to the 9th June 1800: However, in order to have a complete period, I have commenced the preſent from 1ſt June 1800, and brought it down to the 31ſt of May 1801.

In addition to the account of the diſeaſes of the 88th regiment, I have given that of detachments of other corps which had been placed under my charge. On two particulars a good deal of time has been paid, as well as attention; viz. the ſtate of the weather, and the diſſections of the dead. A meteorological journal was regularly kept: The ſtate of two thermometers, both in the ſun and in the ſhade, at leaſt four or five times in the day, was compared by Mr Bruce and myſelf. The inſtruments were, I believe, both correct. We paid all the attention we could to the diſſections, which were generally performed by Mr Bruce, Mr Tonry, and myſelf. Never leſs than two attended; and, to avoid miſtakes, notes of the appearances were taken down on the ſpot by each.

June 1800. In this month we received a very conſiderable addition to the ſick of the former month *. The monſoon continued to threaten, and a little rain fell before the 12th of June, when a great quantity fell. The number of inches which fell daily after this was conſiderable; but I had no opportunity of meaſuring it accurately. After the 12th, there was not a fair day in the month. The thermometer in the ſhade, in the beginning of the month, ranged from 86° to 92°; from the 12th to the end of the month, from 75° to 82°. From the beginning of the month, the number of ſick continued gradually increaſing. On the 24th there were 204 in the hoſpital, from the 88th regiment and the detachments. In the beginning of the month, there arrived from England 53 recruits for the 75th regiment, 30 for the 77th, and 47 for the 84th regiment. There likewiſe arrived a detachment from the Red ſea of 217 men of the 84th regiment, under Colonel Murray. Of the above detachments I had the medical charge.

All the men, as well from the Red ſea as thoſe from England, arrived in a very healthy ſtate. This, however, had not long been the caſe with Colonel Murray's detachment from the Red ſea. Since they had left Bombay, fifteen months before, they had loſt 41 men. During this period they were ſtationed five months at Aden, five months on the iſland of Perim, at the Straits of Babelmandel, and five months at Suez. In the latter place they were very healthy; they had but a few men ill of the ſcurvy at Aden, and moſt of their loſs was at Perim, where hepatitis and fever were the only diſeaſes. There the thermometer in the ſun ſtood at 130°. Of the great number of ſick in the hoſpital at the cloſe of this month, though the 88th regiment daily ſent ſome, a large proportion came from the detachment of the 84th. This perhaps was partly owing to the change of ſeaſon, and partly to ſome unavoidable irregularity among the men after arriving from ſervice, and receiving great balances of pay due to them. In the 88th regiment, with a great deal of ſickneſs, only four deaths fell on this month. Of the 25 dyſenteric caſes admitted, many proved tedious; and of the five caſes of hepatitis, the greater part were treated with nitric acid, and were ſoon cured. We received ſeveral caſes of meaſles; ſeveral of catarrh, and many troubleſome ophthalmias; and I never ſaw inflammation run higher than in this laſt diſeaſe. A very large proportion of the detachments was admitted into the hoſpital; and, towards the end of the month, many of the caſes put on a very ſerious appearance; but no one died during the month. In the detachment from the Red ſea, many old caſes of chronic hepatitis made their appearance, and the greater number of the recruits were attacked with dyſentery.

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* See the Annals of Medicine for 1801.

July. From the 12th of laſt month to the end of July, there was only one fair day, the 8th of July. The quantity of rain which fell was very great, and the thermometer moved from 79° to 83° in the ſhade. Of the 88th regiment, there were 154 ſick in the hoſpital during the month. Of theſe, 82 were admitted in the courſe of the month. The diſtribution of them may be ſeen in the annexed table. Five died in the courſe of the month. The rheumatic caſes proved nearly as obſtinate and tedious as we have ever found them in England. The occurrence of ſcurvy in two men, whoſe diet was always freſh animal food, with a proportion of vegetables, was a matter of ſurpriſe. Some months before, both of them had gone through courſes of mercury. The diſeaſes of the eye yielded more, perhaps, to the change of ſeaſon than to the remedies, but in each of two caſes an eye was loſt. The detachment of the 84th ſent 96 to the hoſpital during the month. Of theſe 36 were venereals, 32 dyſentery, and 12 hepatitis, relapſes of diſeaſes contracted in the expedition to the Red ſea: the reſt were catarrhal, rheumatic, and other leſs ſerious caſes. Many of the dyſenteric caſes being ſlight were treated with Pulv. Ipecac. Comp. and ſome of the remedies uſed in the ſame month laſt year in the 88th regiment: but, in almoſt every caſe, we were obliged to deſert this plan, and to have recourſe to mercury, or the nitric acid. The 84th regiment had been nearly five years in a warm climate. Did a five years reſidence in a tropical climate eſtabliſh this difference between the men of the 84th and 88th regiments? In the ſame month laſt year, the European practice ſucceeded in the latter regiment; but, as we afterwards found, it had not now the ſame ſucceſs as on their firſt arrival in the country. One of the 84th detachment died. Of the 75th we admitted, during the month, 34 into the hoſpital, or more than one half. They were as follows: 15 of dyſentery, 10 of catarrh and pneumonia, and the remainder were venereal and trifling complaints. None of them died during the month. Of the detachment of the 77th, 22, or more than three-fourths of their ſtrength, were ſent to the hoſpital in the month; viz. 12 with dyſentery, five pneumonia, and the reſt catarrhal and trifling complaints. The dyſenteries of the 75th and 77th regiments were ſucceſsfully treated with ſudorifics, occaſional cathartics, and opiates; and venæſection was performed in many inſtances.

Auguſt. During the whole of this month there was only one fair day, the 2d; but, towards the end, the ſhowers were not heavy: it for the moſt part rather drizzled than rained, and the wind was often high. The thermometer in the ſhade, in general, moved from 78° to 83°. On the 12th, 13th, and 15th, it was never higher than 80°, or lower than 78°. On one day, in the end of the month, the mercury got up to 84°. In the 88th regiment, the number of admiſſions was ſtill conſiderable, and the proportion of deaths great, viz. five. Of 31 caſes of dyſentery that occurred, a great many were relapſes, and we found many of them the ſevereſt and moſt tedious caſes that ever occurred to us. The four caſes of hepatitis were very acute, and venæſection, bliſters, and cupping, were of the greateſt ſervice. Three more caſes of ſcurvy occurred. The two caſes of ſplenitis were very acute. Two of the men with dyſentery paſſed lumbrici by ſtool; one vomited them up, and in another they were found in the colon after death. Of the five deaths, one only had been taken ill during the month.

The detachment of the 84th ſent fewer men to the hoſpital during this than in former months; but we had ſtill many of their ſevere liver caſes, three of which were of very long ſtanding. One of the recent caſes died. Of the 75th a conſiderable number ſtill appeared. The prevailing diſeaſes were dyſentery and pneumonia. One of them died. The 77th was nearly in the ſame ſituation: One caſe of fever died, but nothing could be diſcovered on diſſection.

September. In this month there were ſome fair days, viz. 5th, 13th, 17th, 19th, 20th, and 22d. In the ſhade, the range of the thermometer was, in general, from 79° to 86°. On the 25th, 26th, and 27th, it roſe to 87°. During the laſt ten days, we had much thunder and lightning, and the heavy ſhowers were ſucceeded by very cloſe and ſultry weather. On the whole, this month proved rather favourable to us. In the 88th regiment we loſt four men; but one of them had been ill ſince June, and the three others ſince July. Of the 31 dyſenteries, nine were treated with nitric acid. Though the two hepatic caſes were not ſo ſevere as thoſe which occurred in the former month, yet they were attended with much inflammatory diatheſis, and were ſucceſsfully treated, in the beginning, by bleeding and the antiphlogiſtic regimen, and latterly by the general uſe of nitric acid. One of them was diſmiſſed cured in the courſe of the month. The four caſes of aſcites did well by giving them calomel, cream of tartar, and ſquills. Four more caſes of ſcurvy appeared, and the firſt caſe of the Guinea worm, a diſeaſe which afterwards ſo much infeſted us, made its appearance. The detachments were all embarked to join their reſpective corps on the 13th. But the whole detachment of the 75th, and the ſick of the 77th and 84th, were relanded on the 18th, owing to a cauſeleſs alarm of the captain of the ſhip in which they were. Of the 84th there went to the hoſpital, before their embarkation, 14, and two afterwards. Two of them died, both of hepatitis; one of them a very old caſe, and the other had been taken ill in the former month, and he was the only caſe of the diſeaſe that had appeared among the recruits. Three ſerious caſes were admitted from the 77th, and a conſiderable number from the 75th, almoſt all of which were ſevere. One man, who had been three months ill, died. On the whole, at the end of this month, we had fewer ſerious caſes in the hoſpital than in either of the three former.

October. We experienced, in the courſe of this month, a great variety of weather, and great alternation of heat and cold. The month began with very ſultry weather; the heat daily increaſed, and we expected no more rain. There was much thunder, which we hoped was to cloſe the monſoon; the wind was for the moſt part northerly. On the 10th and 11th we had a little rain. On the day of the full moon, viz. the 16th, as well as on the three days precedent and ſubſequent to it, we had ſeveral heavy ſhowers. After this it continued fair till the 27th; on which, and on the 28th, there was much rain, a little on the 30th, and a great deal on the 31ſt, on which day it blew a hurricane. The thermometer had a wide range; but as, during this month, we changed our ſituation, a diſtinction is here neceſſary: from the 1ſt to the 8th, at Culaba, it moved from 78° to 89° in the ſhade. From the 9th to the 31ſt, in the fort of Bombay, it was never below 78°, nor above 88°, and, ſtanding in the ſun, the higheſt point that it attained was 95°. On the 31ſt, in the ſhade, the mercury moved between 74° and 78° during the whole day. It ought to be mentioned, that both thermometers were ſuſpended in the hoſpital, which is ſurrounded on one ſide with a wet ditch, and is perhaps the cooleſt ſituation in the fort of Bombay. The 88th regiment marched on the 8th from Culaba, and took up the quarters of the 86th regiment in the King's barracks. The 86th went to Culaba. In the beginning of this month we had few admiſſions, and none of them caſes of ſerious diſeaſe; but towards the middle of the month, and immediately after the heavy rains, our admiſſions were numerous, and all of them ſerious caſes.

They differed from the diſeaſes we had lately ſeen the moſt. From the 13th to the 23d, 17 caſes of fever appeared; they aſſumed different types latterly, with the ſymptoms of hepatitis, and in ſeven the bowels were affected, and they were treated as dyſentery. This is mentioned, becauſe, in a majority of the caſes of dyſentery which appeared hitherto, there were no febrile ſymptoms. The caſe of ſplenitis was very acute. Of the ſix caſes of hepatitis, three originated in the preſent month. All the hepatic as well as ſplenitic caſes were treated with nitric acid. There were ſix deaths, of which two were from illneſs contracted in the preſent month: the others were in the hoſpital ſince July and Auguſt.

The ſecond caſe of the Guinea worm appeared after we marched into Bombay. The ſick left by the detachments all recovered, and, about the end of the month, were ſent to join their regiments.

November. The ſtormy weather which uſhered in this month, and which, on the 1ſt, was particularly boiſterous, being the day of new moon, continued till the 3d. From this time, a little rain daily fell till the 7th, when a great deal fell; but, after this, it continued fair till the end of the month. The wind was variable, but ofteneſt from the north. The thermometer continued to fall, and, before the middle of the month, we felt that the cold ſeaſon had fairly ſet in. The mercury had an extraordinary wide range from 68°, 50°, to 130°, in the open air. Such a variation of climate in one day, and in one ſituation, we expected would have been attended with proportional ſickneſs. The mornings were foggy, raw, and cold. From ſeven to ten o'clock in the morning, the wind was hot, dry, and ſcorching, which, in many, occaſioned a kind of eryſipelas: the middle of the day was refreſhed by the prevailing wind; but the evenings were very damp, and much dew fell. In the courſe of the month, more dyſenteric caſes were ſent to the hoſpital than in the three preceding months; but many of them were relapſes from old diſeaſes. More caſes of hepatitis appeared than in either of the two former months. Of the four deaths, three had been from ſickneſs of many months, and the other had been ill ſince October. In the caſe of phthiſis pulmonalis, much benefit was derived from lowering the atmoſphere in which he breathed. Two more caſes of Guinea worm appeared, and a ſevere enteritis. At the end of this month, there were fewer ſick than in any of the ſix months before.

December. This month ſet in with weather much the ſame as prevailed during the laſt. The thermometer ſeemed to be getting lower. It was generally at 76° in the morning, and ſeldom above 83° at noon, in Bombay.

On the 4th, orders arrived for the 88th regiment to embark next day. On the day following, every man of the regiment, with the exception of one, appeared on the parade; and this was the man ill of conſumption, already mentioned. I met him on his way from the hoſpital to the parade, and had ſome difficulty in prevailing with him to return back. Different circumſtances prevented our embarkation before the 9th, when 22 of the Company's artillery, with 40 gun-laſcars, 106 of the 86th, and 453 men of the 88th regiment, embarked in the Minerva, a ſhip of nearly 1000 tons burden. Her crew, amounting to 145, beſides ſome native followers of the troops, made a total of more than 800 men on board; and ſhe, beſides, had a great part of a cargo, and many ſtores on board. I am thus particular, as I think the ſickneſs which prevailed during the next and the following month is principally to be attributed to the ſituation of the troops on board the Minerva. We ſailed on the 9th, and on the 29th dropped anchor in Point de Galle roads, in Ceylon; and on the 30th all the troops were landed. The cinnamon ſtorehouſe was aſſigned to the detachment of the 86th and the 88th regiments for barracks. It proved dry, and very healthy. The quarter for the artillery was not ſo good, it being a low, damp room. The weather, from the time we left Bombay till we got within two degrees of Cape Comoria, was much the ſame as we had experienced at Bombay. The wind for the moſt part was S. or S. W. As we approached Cape Comoria, however, we had rain, which increaſed the nearer we came to the oppoſite coaſt of the peninſula, where the monſoon was ſtill in full force. The thermometer, from the 10th to the 22d, ranged from 77° to 81°. From the 22d to the end of the month, it continued between 76° and 80°, unleſs on one day, the 28th, when the mercury got up to 82° 5; and, during the three laſt days of the month, the rain was as conſtant and as violent as in the ſevereſt days of the monſoon. From this weather the men ſuffered ſeverely. As many as could be crowded below were kept on the orlop-deck and gun-deck; but nearly 200 men could not find room below, and were of courſe conſtantly wet. The detachment of the 86th regiment was kept on the poop during the paſſage. In two ſmall brigs, the Fancy and Shannon, about 200 hoſpital and other followers were embarked, who, being equally crowded, ſuffered nearly in the ſame proportion with the troops. The number of ſick that appeared in the courſe of the month was not very great, and very few applied till nearly the end of the voyage.

In the 88th regiment, the number of men ill of hepatitis was nearly double what it had been in any of the eighteen months during which the regiment had been at Bombay. In all of them the ſymptoms were very acute. On the other hand, the number ill of dyſentery was not more than half what there uſed to be during the ſame period. Of nine caſes of fever, two were intermittents. Six caſes of the Guinea worm appeared in this month.

Of the detachment of the 86th regiment, in the courſe of 21 days, 15 caſes of diſeaſe occurred, and all of them very ſerious. Of theſe, two caſes of hepatitis appeared, which both pointed externally. In one a cure was effected, but the other died. There were alſo nine of dyſentery, all of which were as ſevere as we had ever ſeen; one of Guinea worm, one of intermittent fever, and one of ophthalmia.

In the artillery there were two caſes of dyſentery; one of which was particularly ſevere.

Among the ſhip's company, particularly the laſcars, there were many pneumonic and catarrhal caſes; beſides three of intermittent, and one of tetanus.

Jan. 1801.—The diſeaſes of this month, as we expected, were much more conſiderable than in the laſt month. The ſituation of the fort of Point de Galle is very favourable to health. It is built on a rock, which forms one extremity of an extenſive bay. The ſite is elevated, and the Dutch have built here a very handſome town. There being no water at hand, it is luckily free from the uſual ornaments of a Dutch town, dikes and ditches. Perhaps more cannot be ſaid for Point de Galle, than the ſituation of the 19th regiment of foot there, which, three months before our arrival there, had returned from an expedition to Candy with about half their number ſick, and at this time they had only 15 out of 300 men ſick.

On the 7th, the total number of ſick from the artillery, 86th, and 88th regiments, amounted to 70. At the end of the month it did not exceed 30. The month ſet in with rain, and continued ſo till the 12th; after which there was rain only on one day, viz. the 27th. The thermometer was ſeldom below 77°, nor above 82°, in the ſhade, and in the open air 108°. The number of ſick of the 88th regiment was 44, of whom one died ſuddenly, and there was no opportunity for inſpection. Of the four caſes of hepatitis which appeared, three had the diſeaſe before at Bombay. The dyſenteric caſes moſtly were men that never had had the diſeaſe before. The detachment of the 86th regiment had 16 ſick, two of whom died. The diſeaſes were, hepatitis two; dyſentery twelve; fever one; pneumonia one; and Guinea worm one; which laſt was brought from Bombay. The artillery, beſides ſeveral venereal, had two caſes of hepatitis, which were very acute. The gun-laſcars had pneumonia very generally. The ſhip's company had a great number of pneumonic and rheumatic caſes.

On the 3d of the month, the Honourable Company's gun-brig the Panther, with three gun-boats, arrived from Bombay, bringing 30 more artillery and laſcars, all healthy. The only ſick they had were three venereal caſes.

Of the native followers, three died of fever. Pneumonia and rheumatiſm prevailed very generally among them, and they had alſo ſome ill of dyſentery.

February. In this month we left Ceylon. The troops were all re-embarked on the 14th. Eight companies of the 88th regiment, with 22 artillery and four laſcars, remained on board the Minerva; and they are the only part of which, after re-embarkation, I can give any account, at leaſt at preſent. Two companies of the 88th regiment were ſent into the Fancy with Mr Bruce; the detachment of the 86th, with ſome laſcars, into the Hope, with Mr Hoyes; and the followers were ſent on board a veſſel hired for the purpoſe. At Point de Galle ſome rain fell on the 15th and 18th; and the wind was, in general, eaſterly. The medium height of the thermometer in the ſhade was 85°, and in the ſun 106°.

On the 19th we ſailed; and for the remainder of the month continued beating up the Malabar coaſt. On the 23d, immediately after paſſing Cape Comorin, we had heavy ſhowers; but it continued fair during the remainder of the month. In the 88th regiment, there was leſs ſickneſs than during any month ſince their arrival in the country. The two caſes of hepatitis were both recurrences of former complaints, and the dyſenteric caſes were, in general, ſlight. The detachment of the 86th regiment, during the firſt fortnight of the month, had one caſe of fever, and two of hepatitis. There were alſo four ill of dyſentery. In this period three died.

The artillery had one death from hepatitis, and another caſe of the diſeaſe alſo appeared.

The gun-laſcars were healthy, as were alſo the crews of the Panther and gun-boats.

The ſhip's company had ſix pneumonic caſes, four venereals, two caſes of Guinea worm, and one of malignant ulcer.

The difference of ſuſceptibility to the variolous contagion, in this country and in Europe, was formerly remarked: another ſtriking proof here preſented itſelf. At Point de Galle, during our ſtay, the ſmall-pox prevailed very generally, and proved fatal to the natives, the Cingleſe, Malays, and Portugueſe, who mix much with them. It likewiſe appeared in a few Dutch families. But of the 19th regiment, or of the troops from Bombay, no perſon had taken it. On the day we ſailed from Galle, a ſick native follower, one of our bakers, was ſhown to me, and, on examination, I found a large crop of confluent variolous puſtules on him, which could not have been out leſs than three days. He was immediately ſent on ſhore; but no one on board caught the infection.

March. From the 1ſt to the 29th of this month we were beating up for Bombay, and dropped anchor off that place on the 29th, the wind being north-weſterly. As we paſſed near the extremity of the peninſula, on the 3d, there was rain, and lightning on the 11th, 13th, and 14th. After this, we experienced the uſual fair weather of the ſeaſon on the weſtern ſide of the peninſula at this ſeaſon.

The thermometer, till the 3d, continued equally low as in laſt month, when we were at ſea. On this day, the wind being ſoutherly, the mercury roſe to 85°. On the 19th, 20th, and 22d, it ſtood at 87° at noon. On all the other days, it varied from 78° to 83°. In Bombay harbour, which, as ſeamen expreſs it, is land-locked, the thermometer at noon moved from 87° to 90° on the gun-deck. The number of ſick was leſs, but the mortality proportionally greater, than in any other month ſince leaving Bombay in December. Of the three deaths in the 88th regiment, two were from ſickneſs contracted about the 23d of December: both were attacked with pneumonic ſymptoms; and it was not until the laſt three weeks of their illneſs that the ſymptoms indicated an affection of the liver. The other man who died had been ill ſince the 3d of February, alſo of hepatitis. On the whole, the ſtate of the regiment at ſea this month was very favourable: The proportion of actual ſickneſs is not more than one-twelfth or one-thirteenth part of the ſtrength, which is leſs than at any preceding period. For the firſt time, no caſe of hepatitis occurred during this month. There were ten ill of dyſentery, of whom ſeven were recent, and had never had the diſeaſe before. There was only one caſe of pneumonia, which proved mild. Of Guinea worm, 103 caſes occurred during the month.

In the artillery there did not occur any ſick this month. A ſevere caſe of dyſentery, ſent to the Minerva from one of the gun-boats at Ceylon, died in this month. Among the ſhip's company two caſes of dyſentery occurred; ſeven of pneumonia; five of rheumatiſm; two of Guinea worm; and two venereal complaints. In an obſtinate caſe of intermittent, of five months duration, which had reſiſted bark, mercury, arſenic, and ſeveral other remedies, a cure was effected by the nitric acid mixture bath. This appeared the more ſurpriſing, becauſe, in ſome inſtances that occurred, the acid bath had been ſuſpected of occaſioning intermittent.

April. We commenced this month in Bombay harbour, where the heat was intenſe. There was ſome change in the arrangement of the troops made here. Six of the 88th regiment, and the whole of the artillery, were ſent on ſhore; and 40 men of the 88th, who had been left in December, were received on board.

On the 3d we ſailed for the Red ſea. The thermometer, which, in Bombay harbour, was from 80° to 90° in the ſhade, ranged, between the 3d and the 10th, from 78° to 82°. On the 11th and 12th it continued the ſame. On the 13th and 17th it was ſtationary at 79° and 80°. On the 18th, when we were between Cape Aden and Babelmandel, it roſe to 83° 50″. On the 19th we anchored in Mocha roads, and ſailed the day following. The thermometer now continued to riſe till we reached Judda on the 27th, when it was 89° in the ſhade. On the 28th, a north wind brought it to move, during the day, between 78° and 80° 50″, and this continued during the remainder of the month. The wind was variable. It blew, in the beginning, from the S. and S. E. and in general N. N. W. On the 22d and 23d there was lightning and calm weather. Having heard it aſſerted, that, in the Red ſea, the quantity of ſalt kept in ſolution in the ſea-water was very great, I made trial of water from the ſurface; but I found the quantity much the ſame as that diſcovered to be contained in the water of the Mediterranean. It was likewiſe ſaid, that the dews were very heavy; but as far as I could aſcertain, by weighing the quantity fallen in a given time at night on a piece of lint ſix inches ſquare, there was not more than uſually falls in Bombay. The ſickneſs of the month was conſiderable, but no one died. Only one caſe of hepatitis appeared, and the diſeaſe was ſpeedily ſubdued. It is remarkable, that as many caſes of dyſentery occurred during the firſt eight days after leaving Bombay, as in the whole of the preceding month. After the 13th only two caſes occurred. The number of men ill of the Guinea worm at one time was truly alarming; it amounted to 160. Many of them had very bad ulcers; and, in fever, mortification took place. In the courſe of the month, 46 men were admitted with this diſeaſe.

Among the ſhip's company there occurred two caſes of dyſentery, ten of pneumonia, two of ſyphilis, thirty-four of itch, and two of ophthalmia.

May. In the beginning of this month we were endeavouring to keep to ſea, as it blew a very ſtrong gale from the N. and N. E. It was calm on the 4th, but the wind increaſed in the evening, blowing from the ſouth. At this time the Honourable Company's ſhip Cornwallis of 50 guns, with tranſports conveying artillery, and two battalions of ſepoys from Judda, joined us; and we ſailed on the 5th for Koſſier, where we arrived on the 18th, and diſembarked on the 20th. This was the firſt part of the army which encamped in the deſert of Koſſier. Some days following, the 10th, 61ſt, and 80th regiments alſo landed and encamped, as well as the battalions of Bombay and Bengal ſepoys. The former were very unhealthy, and had ſuffered much on the paſſage from remittent fever, which prevailed in the greateſt degree in two ſhips, the Cornwallis and Milford. The firſt battalion of the 7th Bombay ſepoy regiment landed 300 ſick. In one of the ſhips, ſeveral men were ill of the ſcurvy.

The prevailing wind during the month was N. W. There was no rain; but we learned that, a ſhort time before our arrival, it had rained at Judda and Koſſier, and that it was a very uncommon phenomenon at both places. For the firſt three days, the thermometer was from 77° to 80°; on the 4th and 5th, from 80° to 84°; from the 6th to the 11th, it ranged from 77° to 80°; from the 12th to the 15th, it moved from 82° to 88°. On the 16th, 17th, and 18th, it was from 77° to 80°. On the 19th and 20th, in my cabin in the Minerva, it was at 75° at ſix in the morning, and at noon it ſtood at 86°. The ſhip was then moored cloſe to the ſhore in Koſſier harbour. In the camp, the thermometer was ſaid to be 15 degrees higher. We commenced the month with more actual ſickneſs than laſt month; the great and ſudden change of climate, which we experienced in the laſt days of April, was very generally felt. There were many inſtances wherein the cheſt was affected, and in ſome the cold appeared evidently to be the *exciting cauſe* of dyſentery. We had no caſe of hepatitis. Of the ten men ill of dyſentery, all got well in the courſe of the month, excepting one, in whom ſymptoms of diſeaſed liver appeared. Only eight recent caſes of Guinea worm occurred.

The ſhip's company had one man ill of hepatitis, one of dyſentery, ſix of pneumonia, and two of Guinea worm.

At the end of the month the regiment was in a favourable ſtate. The whole of the ſick did not exceed thirty; yet the heat was intenſe, the regular duty ſevere, and, preparatory to the march to the Nile, there was much duty of fatigue, which, from a want of native followers, who uſually do it, was done by the ſoldiers themſelves. The camp was ſituated on a dry, hot, ſandy deſert; and the only wind felt was an extremely ſcorching one, which generally ſet in about ten in the morning, and laſted till three o'clock in the afternoon. One circumſtance appears to deſerve notice: the little water that could be procured was ſtrongly impregnated with vitriolated magneſia; and no one eſcaped a diarrhœa, which, perhaps, had a ſalutary effect. In this month we loſt one man from hepatitis, and another from dyſentery.

The town and fort of Koſſier, built of mud, is ſituated in latitude 26° N. on the weſt ſhore of the Red ſea.

From the above ſketch, I will not venture to draw many inferences, though many obvious, and ſome uſeful, appear to preſent themſelves. On taking a review of the laſt and of the preſent year, it ſtill appears that the moſt unhealthy months are thoſe in which the ſeaſons change. When the ſeaſons of the two laſt years at Bombay are compared, that of the preſent appears to be the moſt unfavourable in many particulars. The rains ſet in much earlier, were much heavier, and continued much longer, than in the former year. The dry ſeaſon, too, was proportionally hotter. In this unuſually ſevere ſeaſon, the men ſuffered much from the peculiar ſituation of the barracks on the iſland of Culaba. Sixty caſes of dyſentery admitted in July are very conſiderable; but, in July 1799, we admitted 129 caſes. Here, then, we appear to have gained by being more than a year inured to the climate. From the ſtate of the men of the 88th regiment at the end of November, and in the beginning of December, when ordered for ſervice, we may venture to affirm, that the regiment would have been more healthy, and that fewer deaths would have occurred in the ſubſequent months, had they remained at Bombay. The ſituation of all on board the Minerva ſufficiently accounts for the many liver and dyſenteric caſes occurring in December and January. The ſame cauſes ſeem uniformly to produce both diſeaſes, and the ſame treatment is equally ſucceſsful in either diſeaſe.

For the laſt 18 months, in the hot ſeaſon, the men were daily marched two miles to the fort of Bombay, were much expoſed to the ſun on the garriſon-duty, and, in the heat of the next day, were marched back to Culaba. Yet it appears, by the tables of both years, that the hot months were, *cæteris paribus*, the moſt healthy. If heat be noxious, ſomething in this inſtance obviated its effects. Was this exerciſe? An inſtance in point, though not within the date preſcribed, will illuſtrate this. In June and July 1801, the degree of heat, on a march of 130 miles over the ſandy deſert of Thebes, and on the banks of the Nile in Upper Egypt, was extreme. I have ſeen the thermometer, in a ſoldier's tent, at 118°. The ſoldiers had, at the ſame time, to combat with ſevere duty, from being without native followers, and the effects of the pernicious drying wind peculiar to the country; yet, under all theſe circumſtances, the health of the troops was equal to what it had been at any former period in India. Heat of itſelf, then, does not appear to be the principal cauſe of the prevailing diſeaſes.

On looking over the returns, and obſerving the proportional ſickneſs of different periods, a periodical increaſe was very ſtriking. The eight or ten days that followed the payment of the balance of pay due to the men regularly produced much ſickneſs. The ſoldier's pay in India, as in England, allows him at times to indulge in exceſs. He is amply ſupplied with proviſions, and perhaps the uſual allowance of arrack iſſued to him is too great. In the rainy months it is half a pint daily, and, in the dry ſeaſon, it is half this quantity. As the price of arrack is low, he very often procures as much as he can uſe; beſides which, he has often acceſs to tarry, or toddy. Some degree of intoxication and irregularity is perhaps unavoidable. Intemperance has hitherto always appeared as a principal cauſe of the diſeaſes which prevailed. On the march over the deſert, and on the voyage down the Nile, no ſpirits were iſſued in July and Auguſt 1801; yet the army, in general, were uncommonly healthy.

The catalogue of diſeaſes is more extenſive than that of laſt year. Perhaps our frequent change of ſituation might have contributed to this. In the diſeaſes of the preſent year we could, in general, obſerve leſs vaſcular excitement than in the firſt year.

A majority of the dyſenteric caſes appeared either immediately after the ſetting in of the rains, or in the courſe of the rainy ſeaſon. In ſome caſes, we could trace the expoſure to moiſture as the cauſe of hepatitis and dyſentery. The ſuffocating heat that followed the rains, perhaps, aided as a cauſe, and ſtill more, perhaps, the inactive ſtate of the men during the wet ſeaſon. On the idea that inaction aided as a principal cauſe, the commanding officer ordered, that in this ſeaſon, when it was fair, the whole regiment ſhould be marched out for an hour; and, while the men were thus exerciſed, the barrack-rooms were aired and dried, the whole of the bedding and furniture being kept out. Yet, notwithſtanding this, and, I believe, every attention which could be paid to men by officers, during and after the rains, the number taken ill was very great.

Though, perhaps, a reſidence for a certain length of time, or a naturalization to the climate, is neceſſary, yet one reaſon may, with probability, be brought forward to account for the difference in point of health between European and native corps. A native of India is aſtoniſhed at firſt to ſee the meals of animal food devoured, and the quantity of ſpirits drunk by Europeans.

There can be little doubt, that the nearer we approach to the mode of living of the natives, the more nearly we ſhall attain their ſtate of health.

The ſame diſeaſe appearing in India and in Europe differs materially in ſeveral points, and requires a different treatment in each country. Hepatitis, for inſtance, is a diſeaſe which makes its appearance frequently. Upwards of 100 caſes appeared in the courſe of the preſent year, the majority of which were chronic diſeaſes, recurrence of diſeaſes which had appeared in the firſt year. The '*tuſſis ſicca*,' and '*decubitus in latus ſiniſtrum difficilis*,' were rare ſymptoms; and there was ſingultus in only one or two caſes. We found not a little difficulty in drawing the line between hepatitis, phthiſis pulmonalis, and ſome ſevere caſes of pleuritis. An accurate diagnoſis is here much wanted. Several men were firſt ſeized with pneumonic ſymptoms, and latterly had ſymptoms of an affected liver. In the courſe of the preſent year, a few caſes terminated fatally, even after a flow of ſaliva from the mouth had been excited. In ſeveral inſtances, the gums could not be affected till venæſection had been performed. After this, a ſmall quantity of mercury affected the gums; and, after they were affected, a liberal uſe of the bark was found to be highly ſerviceable.

The relapſes of this diſeaſe and of dyſentery were more frequent than in any diſeaſe which I recollect, not excepting fever. Bleeding and cupping, on the firſt attack, cut ſhort many caſes of the diſeaſe. A ſwelling pointed externally only in three inſtances; and in only one of theſe was I allowed to make an inciſion. In a man of the 86th regiment, after a pointed tumour had appeared for ſome days in the ſide, it ſuddenly diſappeared, and he recovered. In four caſes, matter was diſcharged by ſtool; and in one a cyſt burſt, and diſcharged its contents into the cavity of the abdomen.

There were upwards of 500 caſes of dyſentery. In the 88th regiment, however, many fewer occurred than in the laſt year. It would appear, that the general cauſes of this diſeaſe differ in India and in Europe; and there is not a little difference in the ſymptoms. Dyſentery was attended with fever but in a few inſtances, and in theſe it was the ſynocha of Cullen. I do not think that ſcybala were paſſed in ſix caſes. The teneſmus appears to ariſe from a different cauſe. Purgatives do not appear to give the ſame relief as in Europe, or even in the Weſt Indies. Several caſes of a very acute diſeaſe appeared, which ran its courſe in four, five, or ſeven days. The uſual practice did not ſucceed here. The beſt treatment appeared to be, after a doſe of caſtor oil, to give opium by the mouth and by glyſter, and to make the patient drink freely of a ſolution of gum Arabic at the ſame time. In ſome caſes I have given diluted nitric acid liberally, with tincture of opium. A conſtriction of the veſſels diſcharging mucus was in this way effected; the inceſſant diſcharge was ſtopped, and time given for a ſecretion of mucus to cover the abraded gut. I have thus ſometimes ſucceeded in checking a moſt violent diſeaſe. Thereafter the mouth could be gradually and gently affected by mercury, and by nitric acid. I have nearly divided the number of caſes that occurred between the two modes of practice; and, after the utmoſt attention that could be beſtowed, the ſucceſs of the two appeared nearly equal. As in laſt year, ſeveral ſucceeded with mercury, after the acid had failed, and *vice verſa;* and, after a failure of both modes ſeparately, the conjoined uſe of them ſucceeded. For this I can aſſign no reaſon. When nitric acid was uſed, the external and internal uſe of it was conſtantly ordered. The mean quantity taken internally in the day was about ſix drachms. Enemata, in many caſes, gave the higheſt relief. An infuſion of ipecacuanha, ſolutions of vitriolated zinc, and of acetated ceruſe, and diluted nitric acid, were frequently employed.

The caſes of ſplenitis occurred in July, and proved tedious. Cupping and keeping the bowels looſe ſeemed to be of more ſervice than any thing elſe. Various mercurial preparations, and alſo nitric acid, were tried, but appeared to do no good. In one inſtance, the ſymptoms of ſplenitis ended in thoſe of hepatitis.

Of nearly 100 caſes of fever which occurred, the greater part were trifling, and originated from inebriety or expoſure to the ſun. They required only reſt, and perhaps a purgative, and the patient recovered in two or three days. The irritation produced by the Guinea worm occaſioned a ſmart fever in ſeveral. Thirty caſes of intermittent were cured. The fever which appeared in October and November was remittent. In two caſes there was at firſt a great deal of reaction, which ended in extreme debility. Theſe two approached the neareſt to typhus of any caſes I had ſeen ſince my arrival in India. Affuſion of cold water ſeemed, in theſe two caſes only, to ſucceed, though it was tried in ſeveral others. In ſevere paroxyſms of intermittent, the exhibition of opium ſtopped them; and ſome of them were cured without the aid of any other medicine. Creät, a bitter root uſed by the natives, was given as a ſubſtitute for the bark, and ſucceeded in two inſtances. In all the ſevere fever caſes, the cure was always more ſpeedy and certain under the exhibition

tion of mercury, until the gums were affected; and ſeveral of the worſt caſes reſiſted every other remedy.

None of the caſes of fever or dyſentery appeared to be contagious. A battalion at Koffier had about 300 men ill of fever, and another battalion had 140. In both caſes the fever was remittent, and the combined uſe of mercury and bark was found to be the moſt ſucceſsful treatment.

The meaſles all appeared in June. When the ſame diſeaſe appeared in Europe, it generally made its way through a great part of the regiment. The inflammatory ſymptoms were mild: the after affection of the eyes was the moſt troubleſome part of the diſeaſe. Though the croup was very prevalent both in the town and in the iſland of Bombay in September, October, and November, and though ſeveral adults died of it, yet no caſe appeared among the women, children, or men of the 88th regiment, or of the detachments.

Many caſes of pneumonia occurred, and not a few of catarrh and rheumatiſm; but, in general, the ſymptoms were very mild, and the diſeaſe was eaſily managed.

Only one caſe of well-marked phthiſis pulmonalis occurred; and this points out one remarkable difference between the Indian and European climates. For the laſt eight years, the number of caſes which yearly appeared in the 88th regiment was, I believe, never ſo few as ſix: in the ſolitary caſe which took place this year, reducing his atmoſphere had the beſt effect. Several caſes of cholera morbus, and a few of icterus, occurred; but the ſymptoms were mild, and not of long duration.

Scurvy.—The appearance of this diſeaſe in the 88th regiment, ſituated, as they were, in barracks on the iſland of Culaba, is not a little extraordinary. As already mentioned, it made its appearance in July, ſoon after the ſetting in of the rains, and the number was but ſmall. In the abſence of ſome of the uſually aſſigned cauſes, I recollect the doubts expreſſed by the Members of the Board, till inſpection convinced them of its actual exiſtence.

The firſt caſe that appeared had formerly been ſubject to the diſeaſe on the paſſage from England, and, on landing in Bombay, he was cured by a remedy in common uſe in India, the fermenting juice of the cocoa-nut-tree, called toddy. Nitric acid was preſcribed, and got a fair trial, but the citric acid was found neceſſary to the cure. The next caſe proved fatal. The moſt ſevere ſcorbutic ſymptoms appeared, viz. Dyſpnœa, contracted joints, livid blotches over the whole body, ſpongy gums, fœtid breath, and, for the moſt part, an inceſſant diarrhœa. The appearances on diſſection in this caſe are hereafter taken notice of, of. The third had his mouth putrid, and the teeth were literally ſhaking in their ſockets, as in a ſkull. The three next were of a ſlighter nature. Another had a ſevere ophthalmia, which had reſiſted a variety of applications, both external and internal, for five months, when the acid of limes was thought of. In twelve days it effected a cure. The only ſcorbutic ſymptoms in this caſe were, a tenderneſs of the gums, and a blue ſloughineſs round the edges of a ſeton. In four, nitric acid was liberally given, both externally and internally, and perſiſted in. For ten days the acid afforded relief, but afterwards the diſeaſe gained ground; and, in all the caſes but one, cures were effected by lime juice, and by giving the fruits of the ſeaſon. I ſhall not attempt to account for the appearance of this diſeaſe. Moiſture, one of the commonly aſſigned cauſes, was preſent. But though the men uſed but few vegetables in their diet, yet, during the whole time, they were daily ſupplied with freſh meat.

Tetanus.—A caſe of this diſeaſe occurred, which was treated ſucceſsfully. As this was done by a mode of treatment which, with the theory which gave riſe to it, is, I believe, now conſidered as exploded, it may not be unintereſting to mention what led me to give it a trial. In the year 1794, the firſt tetanic caſe I met with occurred at Bergen-op-Zoom. My hoſpital ſteward, ſerjeant Kirkland, after remaining out drunk the whole night, was, in the morning, found lying in a ditch. This was in the month of Auguſt, and the weather was remarked to be unuſually hot. When brought to the hoſpital, his jaws were ſo firmly locked, that the blade of a penknife could not be introduced between the teeth. Mercury was had recourſe to, but, in a few hours, the muſcles of the neck became convulſed, and, by the advice of an eminent phyſician of the place, he was immerſed four times a-day into a bath of broth. He continued in it half an hour each time, and, after he came out, his whole body was rubbed over with mercurial ointment, and his gums with calomel. I do not recollect that any thing elſe was given him, unleſs a ſtimulant enema. Next morning the good effects of this treatment were moſt evident. A violent ſalivation came on, and, in about three weeks, the man was doing his duty. In the next caſe which occurred, though a cure was not completely effected, the ſame treatment was for ſome days attended with good effects. In the iſland of Grenada, a negro attached to our pioneers received a contuſion and a ſlight wound on the head. The warm bath and the liberal uſe of mercury were ordered. He continued better for ſome time, and I flattered myſelf with the hopes of another cure; but the diſeaſe gaining ground, the cold bath and tonic treatment were had recourſe to, and the patient died. The next was a ſailor, who, a few days before our embarkation in the Minerva, had been ſlightly wounded in the foot by a copper nail. On my firſt ſeeing him, his ſymptoms were ſlight, but were gaining ground very faſt. On the 10th of December, the day after our embarkation, he had the moſt violent ſymptoms of the diſeaſe; the jaws were firmly locked, the muſcles of the neck, before and behind, were ſtrongly convulſed, and he had twitchings of the muſcles of his face. He pointed to the region of the ſtomach, where he afterwards told me that he had intolerable pain and ſickneſs. He was immediately put under the ſame treatment as was employed in the caſe of the ſerjeant, with this difference, that, inſtead of broth, a bath was made from fat, or what is called ſluſh. The ſame ſucceſs attended, but the ſymptoms yielded more ſlowly, and it was ſeveral months before he recovered.

Guinea worm makes a conſiderable figure in all the reports during the laſt ſix months. Having never ſeen or heard much of this diſeaſe, and, at a time when the regiment was overrun with it, being without medical advice and aſſiſtance, I was not a little perplexed. Latterly I flattered myſelf that I ſucceeded in treating it, and that I had made ſome diſcoveries regarding the diſeaſe; but as probably my obſervations are only thoſe of others, and may even be contained in books, I ſhall only mention the manner in which the diſeaſe made its appearance. In September 1799, the 86th regiment relieved the 84th in the fort of Bombay, where they remained until October 1800, at which time they were relieved by the 88th regiment from Culaba, as already mentioned. The 86th regiment was free from the diſeaſe on coming into the fort, and continued ſo till the ſetting in of the monſoon of 1800. The King's barracks in the fort are ſituated cloſe to the Bazar, where, at the beginning of the monſoon, it was obſerved, Guinea worm prevailed very generally among the natives. In the courſe of the monſoon, 200 caſes of Guinea worm appeared in the 86th regiment. The 88th regiment, from the time of their arrival in June 1799 till October 1800, were quartered at Culaba. In all this period they never had but one caſe of Guinea worm, and this happened in the end of September, and in a ſubject debilitated from hepatitis and dyſentery. None appeared in October; but, in that part of November which immediately preceded our embarkation, three caſes appeared. During the voyage to Ceylon ſix occurred, and all remarked, that the caſe in the 86th regiment preceded theſe. The table ſhows the progreſs of the diſorder thereafter; and it will be obſerved how very rapidly they increaſed on ſhipboard. The officers took notice that it prevailed moſt in particular parts of the ſhip, and more in one company than in another. This ſo much ſtruck the commanding officer, that the ſick were ſeparated from the ſound. The men with Guinea worm were kept on the orlop, and the others on the gun-deck. Whether from this precaution, or whether the diſeaſe had by this time run its courſe, after pervading three-fourths of the regiment, we obſerved a gradual decreaſe, as will appear by the table, after this period. One circumſtance was too remarkable to eſcape the obſervation of any one on board. In the detachment of the Company's artillery with us, not a ſingle caſe appeared, although they ate the ſame proviſions, drank the ſame water, and, in every other circumſtance, were as the men of the 86th and 88th regiments; but they were always kept ſeparate, and, during the whole voyage, were accommodated apart on the gun-deck. A good deal of attention was paid to this diſeaſe in all its ſtages, and ſeveral experiments were made on the worm, which will be better detailed hereafter. After uſing a variety of articles, and making them enter the limbs by abſorption, I think I have ſucceeded in killing the worm by rubbing in unctuous ſubſtances, particularly ſtrong mercurial ointment. Paſſing an electrical ſhock through the part had no viſible effect.

The ophthalmia which occurred was very ſevere, and required ſcarification, and the antiphlogiſtic regimen to its fulleſt extent. I heard of a ſpecies of ophthalmia ſymptomatic of hepatitis; an inſtance of which occurred in an officer, which reſiſted all the common means, until his mouth became affected with calomel.

In a caſe of varix of the ſaphena, the operation recommended by Mr Everard Home was performed, and a ligature paſſed round the vein, four inches above the knee; but a cure was not effected. The man was tall, above 50 years old, and the diſeaſe of many years ſtanding.

Two inſtances of ſuſpended animation occurred. In one of them, a ſoldier of the 86th regiment, who had remained about half an hour in the ditch of the fort, we failed. The other, who had been only a few minutes under water, Captain Trotter, recovered, by putting in practice ſome of the means recommended by the Humane Society.

Diſſection was performed, and the appearances after death noted in 18 caſes, and minute accounts are preſerved. The bodies were inſpected from four to 12 hours after death, unleſs in one inſtance, where it was not done until after 18 hours. In the 18, ſix had an aqueous effuſion in the thorax and abdomen reſembling ſerum, of various colours, and coagulated by heat, as far as was tried. Hydropic ſymptoms were only diſcovered in one inſtance before death; but in this the quantity of effuſed fluid was the moſt conſiderable, amounting to five pints. In one caſe, upwards of a quart of thick pus was found on the ſurface of the viſcera of the abdomen.

The omentum in the greater part was found waſted. In two of them it had a macerated glairy appearance, which might ariſe from the fluid in which it was immerſed. In one caſe, which terminated very rapidly, there were in both omenta all the appearances of inflammation, and the great omentum ſeemed to be the principal ſeat of diſeaſe. In another, appearances ſhowed that inflammation had exiſted; it extended to the boundary of the pelvis, to which this viſcus was ſtrongly attached; and, in ſome places, it ſo girt the inteſtines, as to have the effect of a ligature on them.

In about one half of the caſes, diſeaſe had reached the ſtomach. In the recent ones, almoſt all the veſſels of the villous coat, and near the two orifices, were much diſtended with blood. The quantity of bile which it ſometimes contained was conſiderable. Our early inſpections perhaps prevented us from obſerving, in any inſtance, the effects of the actions of the gaſtric juice on the ſtomach. In all the liver caſes, the adheſions between the liver and ſtomach were firm and extenſive.

The inteſtines were more generally diſeaſed than any of the other viſcera. In all but three we met with morbid appearances. The large inteſtines appeared to be the principal ſeat of the diſeaſe. The only marks of diſeaſe obſerved in the ſmall were inflamed ſpots, contractions of their diameter, thickening of their coats, enlargements of the valvuli conniventes and introſuſceptiones, probably all of them the effects of previous inflammation. The cœcum and its appendix, in ſome caſes, were the moſt diſeaſed. In the cœcum of one man we found ſeveral detached yellow lumps, and nine undiſſolved mercurial pills, little changed. The appendix was unuſually large, and contained yellow matter. In moſt caſes, however, the rectum, and particularly its extremity, ſuffered moſt. In one inſtance, ſo diſeaſed was this gut, that, through the greater part of its extent, nothing remained but its peritoneal coat. Large ulcers near the ſphincter ani were a common appearance. In ſeven caſes the cœcum, colon, and rectum, were gangrenous. In one inſtance, the cœcum was about the uſual ſize of an empty ſtomach; and the internal ſurface of the rectum had the appearance of a foul ſcorbutic ulcer. The colon was leſs frequently diſeaſed at its two extremities than along and about the centre of the arch.

The meſentery was not ſo frequently diſeaſed as we were led to expect. In only ten caſes, unuſual morbid appearances exiſted.

ed. In one the meſenteric glands were ſoft, and the cellular membrane tended to a ſtate of putreſcence. In three there were marks of inflammation preſent; the glands were enlarged, but not indurated; and the blood-veſſels were turgid. In the remainder the glands were hard to the feel, but did not amount to what is denominated ſcirrhus. In one of the caſes above alluded to, the meſocolon alſo was gritty, thickened, and unuſually loaded with fat.

In what proportion of caſes the liver was diſeaſed, it is not eaſy to ſay. If we rank thoſe caſes where the liver was of a colour different from the natural, or where there were variegated ſpots on it, among the diſeaſed liver complaints, we ſhall find but few exempt from the diſtinction. Only four of the caſes inſpected would fall under the deſcription of ſound. In two we found abſceſſes in the right and left lobes. In one there were ſmall cyſts, containing pus in all the lobes. In three the veſſels were enlarged, the liver of an increaſed ſize, with marks of previous inflammation. In one there were abſceſſes in the right lobe and lobulus ſpigelii. In another the abſceſs was in the lower extremity of the right lobe, including the fiſſure, and eroſion there had proceeded ſo far that it muſt have ſoon made its way through the coats of the ſubjacent great blood-veſſels. In one caſe, the liver was of rather a darker colour than the ſpleen. In another, it was of a bright caſt-iron colour. The liver was alſo found very ſmall in two inſtances; in one of which it did not exceed half the natural ſize, and was harder than natural, but without the gritty feel of ſcirrhus. In nearly all the other caſes, the liver was larger than the uſual ſize. It ſometimes filled both hypochondria, compreſſing the ſtomach and ſpleen, and touching the ribs of the left ſide. The weight was not always proportioned to the enlargement. The liver ſometimes had a ſoft feel. In one caſe, however, where the enlargement was not ſo conſiderable as in many others, it felt very firm, and weighed five pounds. Here there were marks of inflammation on all the inferior portion of the right lobe, particularly near the portæ. In a caſe of long ſtanding, there ſeemed to be more diſeaſe than in any other: the pori biliarii were full of matter, of a conſiſtence between that of ſerum and pus. Was this a morbid ſecretion? We found adheſion between the liver and peritoneum in eight caſes; but there was an external prominence in only three caſes. In one of theſe an inciſion was made betwixt the 7th and 8th ribs; but the caſe proved unſucceſsful. In none of the caſes did we find a communication between the liver and the lungs. Of the four caſes, where no marks of diſeaſed liver could be ſeen, two were caſes of fever; one of ſcurvy, who had laboured latterly under every ſymptom of hepatitis; and the fourth had, for four months before his death, every ſymptom of the diſeaſe.

There was in general little diſeaſe either in the gall-bladder or biliary ducts. In ten caſes the gall-bladder was found diſtended. In one the ductus communis was impervious. In none of the caſes did we find a calculus. In another, though the veſica fellis was not much diſtended, there were marks of inflammation; the veſſels of the external coat were turgid, and there was an intimate adheſion to the ſtomach, and the gall-bladder contained a heterogeneous fluid. In the ten caſes mentioned, the gall-bladder contained from two to four ounces of bile of different colours, conſiſtence, and probably of different qualities. It would have been agreeable to have obſerved this, and to have compared it with ſound bile.

The ſpleen had ſeldom the marks of diſeaſe. In the conſiſtence, colour, and weight, there was a conſiderable variety. In one it was very ſoft, and about two inches of its right extremity were eroded. In another it was inlayed in all its dimenſions, and weighed very nearly 12 ounces. In two inſtances it was found very ſmall. In different ſubjects there was a conſiderable variety in the colour, conſiſtence, and dimenſions of the ſpleen, but leſs of what we could diſcover to be diſeaſe than in any of the viſcera already taken notice of. In one it meaſured more than ſix times the natural ſize, and the left extremity was deſtroyed by the matter which floated in the abdomen. It was large, and its veſſels diſtended, in another; and, in a third, it was enveloped in glairy matter.

We found very little change in the urinary organs: from propinquity the kidneys were ſometimes affected, and there were adheſions to the colon and meſentery. In one caſe we found watery veſications on their ſurface.

The morbid appearances in the thorax were confined almoſt excluſively to the lungs and pleura. No caſe was free from adheſions. In many caſes were found polypi in the cavities of the heart. In one inſtance, the upper edge of the right lobe of the lungs contained a vomica, in which was about an ounce and a half of whey-coloured ſerum. The contiguous portion of the pleura was eroded. The right lobe in general felt hard, and ſometimes tuberculous. In one inſtance, the right lobe adhered very extenſively and firmly to the pleura and diaphragm. In one of the ſcorbutic caſes, the blood in the heart was very dark and fluid. In the right ventricle was found a portion of coagulable lymph branching from it to the pulmonary artery.

In one caſe we found a ſmall lumbricus in the colon, and in another a live worm, of the ſame ſpecies, in the duodenum.

Five ſmall worms were found in the cœcum of another, of a deſcription nearer to that of lumbricus than any other worm, but not ſo broad, and only two inches in length.

In three caſes we found introſuſceptions in the ileum.

In the ſcorbutic caſe above referred to, we found, on diſſecting the teguments and faſcia of the right thigh, the ſartorius muſcle black and mortified for ſeveral inches above its inſertion into the tibia. The lower end of the vaſtus internus, and a conſiderable portion of the neighbouring cellular membrane, had the ſame appearance. What was particularly remarkable is, that there was hardly any external mark of ſuch extenſive diſeaſe, except a ſlight diſcolouration. The body was inſpected ſeven hours after death.

III.

A Caſe of Compound Fracture of the Humerus from a Gun-ſhot Wound, in which Amputation was performed at the Shoulder Joint. By R. Watson Robinson, M. D. F. L. S.

My only intention in drawing up the following caſe is to relate the hiſtory of an operation, of which very few detailed accounts are to be found in the records of ſurgery. I do not profeſs to offer any thing new, nor do I recommend any particular directions which are to be met with in the ſyſtems of ſurgery. Mr Bromfield has publiſhed, at ſome length, a hiſtory of this operation in his Obſervations on Surgery; and a ſimilar caſe is given in a pamphlet on amputation, publiſhed by Mr Alanſon of Liverpool; in both of which is contained every important inſtruction: yet as the accumulation of facts muſt tend to confirm our judgment, and ſtrengthen our reſolution in points of difficulty in practice, it is hoped that the following caſe, in addition to thoſe above mentioned, will neither be unintereſting nor uſeleſs.

On the 11th of July 1803, I was called to the aſſiſtance of Hugh Shields, a poor man in the 53d year of his age, employed as night-guard to the extenſive works belonging to Mr Horrocks of Preſton. I learned that, when going his uſual rounds at one o'clock, he had careleſsly put the butt end of a blunderbuſs loaded with ſlugs into his left coat-pocket, and had allowed the barrel to lodge between the ſide of the body and the arm; in which poſition the piece went off. I ſaw him in leſs than half an hour after the accident, and obſerved the following appearances. The integuments covering the left breaſt and clavicle were diſcoloured and tumefied, and there was an extenſive laceration of the ſkin, from the clavicle near to its humeral connexion acroſs the folded edge of the pectoral muſcle, and extending more than half-way down the ſide of the cheſt. The arm was literally beat into pieces; the ſkin covering the inſide was torn from the elbow acroſs the border of the pectoralis major, and as high as the collar bone, and lay reverted on the poſterior part of the arm; the muſcular ſubſtance was rent into irregular portions, and beat into a pulpy maſs; the humerus was ſplintered from the elbow to within an inch of the ſhoulder joint, and many pieces were forced into the fleſh. The acromion was fractured, and a few ſhot-holes were obſerved above the point of the ſhoulder. The ribs were not injured. It did not appear that the brachial artery was divided, although the hemorrhage had been very conſiderable. The patient was ſleepy; his pulſe feeble and quick; the breathing ſlow, but free; the countenance had a cadaverous appearance, and the extremities were cold. This examination of the limb ſatisfied me, that nothing but immediate amputation at the ſhoulder joint could ſave the life of my patient. I therefore requeſted the aſſiſtance of my friend Dr Low in conſultation, and he agreed with me in this opinion.

Preparatory to the operation, the man was ſeated on a chair, and was ſupported by an aſſiſtant placed on each ſide, whilſt a third perſon raiſed the arm to nearly a right angle with the body. The firſt inciſion was made with a common round-edged ſcalpel through the integuments, beginning at the inner edge of the deltoid muſcle, carrying it downwards in a ſemicircular direction, and continuing it to the middle of the axilla, on the outſide of the axillary artery; then turning the edge of the knife upwards, the deltoid and poſterior muſcles were divided obliquely down to the bone, from which they were ſeparated ſo as to expoſe the joint. An aſſiſtant was now directed to make firm preſſure on the ſubclavian artery, as it paſſes over the firſt rib; while, with the ſame knife, I attempted to form the flap on the oppoſite ſide, by dividing the integuments in a direction, from neceſſity, the reverſe of the former, *i. e.* with the concave edge towards the breaſt. In this way, I thought that the round border of the outer flap might be conveniently adapted to the concave edge of the inner one, by which means the face of the ſtump would be made ſmooth and even. After this diviſion of the ſkin, the edge of the knife was turned upwards, and the muſcles divided as on the oppoſite ſide. Immediately there was a conſiderable

able guſh of blood; but it was ſoon ſtopped by the fingers of the aſſiſtant, until the head of the bone could be diſengaged from the ſocket, and then it was ſecured by paſſing a crooked needle and ligature round it. After the fractured portion of the acromion was removed, and the rough extremity of that proceſs made ſmooth, and all the ſmall pieces of bone picked out, the flap was brought forward, and was retained to the oppoſite ſide by means of three ſutures, and ſmall pieces of adheſive plaiſter. The ligature was left to hang out at the inferior angle of the wound. In the ſame way, the lacerated integuments of the cheſt were brought together and ſecured. Lint dipped in the traumatic balſam was applied over the adheſive plaiſter, and over all a compreſs of linen. The whole was ſecured by the flannel roller.

I called upon my patient in about ſeven hours after the operation, and was informed by the gentleman who had been left to watch the ſtump, that he had continued very quiet, and had ſlept two hours. He complained of a ſlight twitching in the ſtump, and of ſoreneſs about the breaſt. The ſkin was hot and dry, the pulſe quick, and rather full; the tongue dry and white. He was diſtreſſed with headach, to which, he ſaid, he had been ſubject for ſome years: He had taken freely of cold water to remove his thirſt, and had uſed the urinal, but he had not had a ſtool. He was ordered to take freely of barley water acidulated with lemon juice, and the ſaline mixture in the ſtate of efferveſcence: a laxative enema was immediately injected, and a draught, with 35 drops of laudanum, was directed to be taken in the evening. The febrile ſymptoms ſoon left him; but he appeared dejected, and complained of anxiety about the præcordia. A cordial aromatic mixture, with a more generous diet, and a moderate allowance of port wine, ſoon reſtored him to his uſual health.

The dreſſings were removed on the 7th day after the accident. The diſcharge was offenſive, and in conſiderable quantity. The inferior angle of the ſore looked black and ſloughy, but the middle and upper portion had united by the adheſive inflammation. The ſwelling and levidity of the ſurrounding parts had, in a great meaſure, diſappeared, and the pain of the ſtump was ſo inconſiderable, that the patient could allow it to be handled with freedom. On the 12th day, the ligature was thrown off, and the ſutures were taken out; and, as the diſcharge had abated very much, I brought the ſeparated edges of the inferior angle of the ſtump in contact, and retained them firmly together. In leſs than five weeks the wound was nearly healed, a ſmall ſinus only remaining, through which a glairy fluid was diſcharged; but it gradually cloſed, after the daily uſe of an injection compoſed of lime water and ſpirit of wine. For three or four months afterwards, ſmall abſceſſes occaſionally formed in the cicatrix, from which a ſmall portion of bone was uſually diſcharged: but nothing of this ſort has happened ſince that time, and the patient has continued in perfect health. I may here remark, that the face of the ſtump is not now ſo ſmooth as it was for ſome time after the cure, owing, no doubt, to the abſorption of the muſcular ſubſtance of the flap, from the inactive ſtate of theſe parts.

To the practical reader this caſe will ſuggeſt a few reflections; and, firſt, as to the beſt poſition in which to place the patient for the operation. Many experienced ſurgeons direct him to be laid on his back on a table, ſo that the injured arm may be brought over the edge of it. Heiſter thinks it moſt convenient to the operator that he ſhould ſit on a chair, as in the caſe juſt related; while Profeſſor Calliſen prefers laying him on his ſound ſide on a table. This laſt poſition, I ſhould think, would be the eaſieſt to the ſurgeon, and therefore preferable to the two former; and the firſt appears the moſt objectionable. When the patient is laid on his back, the ſurgeon has not the ſame command with the knife, the arm cannot be raiſed to any convenient height, and he is fatigued with ſtooping.

The plan of the operation muſt depend upon the nature and degree of the accident or diſeaſe which requires it. When an abſceſs or caries in the joint is the cauſe, we have our choice in what way to form the flap; but this is not always the caſe in compound fractures from gun-ſhot wounds, &c. Our object is to ſave as much ſkin and muſcle as will cover the joint. It would be ſuperfluous to deſcribe the different methods employed by Mr B. Bell and Mr Alanſon in the operation, as the reader may find them detailed in their reſpective writings. Mr Alanſon's mode is leſs complex, and can be more ſpeedily executed. In Hugh Shields' caſe, the ſkin was torn as high as the clavicle, acroſs the folded border of the pectoralis major; conſequently a ſufficient quantity of ſkin could not be had to form a flap equal in breadth with the outſide one. I was therefore compelled to operate in the way I have related. By forming the flap on the outſide, I preſerved a ſufficient quantity of ſkin and muſcle to cover the joint completely, and to reach the ſound parts on the oppoſite ſide; the fleſhy deltoid filled up the cavity, and the face of the ſtump was thus made ſmooth and even; though, no doubt, the removal of part of the acromion contributed to this effect.

Mr Bromfield recommends us to pare off the cartilage of the joint with a knife, becauſe the time required to complete the exfoliation (which, he believed, muſt always happen) makes the cure very tedious. To this Mr Alanſon objects; properly obſerving, that the cartilage will throw out granulations, and unite with the ſoft parts; and that, in thoſe caſes where exfoliation did take place, it was ſolely the effect of the dry lint which was applied. In the preſent inſtance, the ſlow union of the cartilage and ſoft parts made the cure tedious. A ſinus was formed, and a quantity of a glairy ſynovial fluid diſcharged. I cannot ſee that any damage would be incurred by removing both the ſocket and point of the acromion: Our labours would be abridged, and the face of the ſtump would be both rounder and more even, by following this practice.

My patient was ſo exhauſted by loſs of blood before the operation, that I was anxious to ſecure the veſſel as quickly as poſſible: I therefore paſſed an armed crooked needle, and included in the ligature both artery, vein, and nerves, along with ſoft parts. No bad ſymptom followed; nor did I ever witneſs any diſtreſs from including the end of a nerve in a ligature. I by no means aſſert that it is not of importance to exclude the nerve; bad ſymptoms may follow, and therefore it ſhould be excluded, when it can be readily ſeparated from the neighbouring parts. But it ſometimes happens in urgent caſes that the nerve cannot be eaſily diſcovered, and we ſhould loſe our patient from hæmorrhage in the attempt.

Where the blood-veſſel to be tied is large, and ariſes near the heart, I do not think it ſafe to truſt to the tenaculum and ligature. The impetus with which the blood is ſent forward may force off the ligature from the end of the artery; an accident which I have twice witneſſed. It is ſafer to uſe the crooked needle, or to follow the plan lately recommended, of tying the artery, and then paſſing the end of the ligature, by means of a needle, through the veſſel between the extremity of it and the tied part, and then ſecuring the two ends with a knot. This practice is ſaid to be ſuperfluous by a late writer *; but I am convinced of the fact, that the ligature is ſometimes beat off, which muſt greatly endanger the life of the patient.

I cannot ſpeak to the effect which preſſure, well applied and ſteadily preſerved, would have in ſtopping the bleeding from the brachial artery, becauſe, in the preſent inſtance, the parts were too much ſwelled to admit of it. Mr John Bell ſays, that preſſure applied *above* the clavicle would not have any effect; a direction which Mr B. Bell has inadvertently given. But if, as Mr J. B. admits, the bleeding *may be conſiderably reſtrained* (though not quite ſuppreſſed) by preſſure applied on the artery *below* the clavicle, juſt after it has emerged from the arch, and paſſes over the firſt rib, it is no trifling advantage in this operation, and ſhould not be neglected. *Preſton, Feb.* 25. 1805.

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* Med. and Phys. Journal, No. 72. p. 101.

IV.

Hiſtory of a Caſe of Triſmus, in which the Affuſion of cold Water was ſucceſsfully employed. By WILLIAM DALRYMPLE, Surgeon, Norwich.

ON the evening of the 14th of September 1803, Miſs E. E. 22 years of age, with dark brown eyes and hair, of a delicate and very irritable fibre, being then in perfect health, was ſeized, whilſt drinking tea with a party of friends, with a total inability to ſwallow, accompanied by a ſenſe of ſoreneſs and rigidity among the muſcles of the hinder part of the neck. In a few moments theſe ſenſations ſubſided, and were followed by a very painful contraction of the levator muſcles of the lower jaw, which, for a few minutes, became violently and immoveably locked.

Alarmed by theſe ſymptoms, and by the recollection of a recent and ſevere illneſs, ſhe made preparations for returning to her houſe; but, before ſhe was ready to begin her little journey, the ſpaſm completely abated, and her friends importuning her to continue among them, ſhe yielded to their wiſhes, and paſſed the remainder of the evening in perfect eaſe. In the courſe, however, of the following morning, ſhe was viſited by three or four ſlight attacks of a ſimilar kind, which, towards the evening, gradually increaſed in frequency and force, and at length terminated in a firm and permanent contraction of the lower jaw. In this ſtate, accompanied by her mother, ſhe came to Norwich for my advice.

From an intimate acquaintance with the extraordinary irritability of my patient's ſyſtem, and having in recollection a train of very curious and ſomewhat analagous phenomena, which, in the courſe of a former illneſs, aroſe from the irritation of worms, I was at firſt inclined to attribute the preſent ſymptoms to the ſame cauſe, and to conſider the preſent complaint as a modification of that ſpecies of ſpaſm which SAUVAGES has denominated *Triſmus Verminoſus*. Upon inquiry, however, I diſcovered that, about three weeks previouſly to the commencement of this attack, my patient had accidentally trodden upon a thorn, which penetrated her ſhoe, and entered the ſole of her left foot, near where the firſt phalanx of the great toe is articulated with its metatarſal bone. The wound was indeed ſo ſlight and ſuperficial, that, having removed the thorn, ſhe proceeded without inconvenience in her walk, and did not immediately recollect the accident, when I aſked her concerning it.

Upon examining the foot, a minute ſpeck of hardened blood, not larger than a ſmall pin's head, was ſtill perceptible in the ſkin where the thorn had entered; but not the fainteſt veſtige of inflammation now exiſted, nor did preſſure upon the part, *at this time*, occaſion the ſlighteſt pain or agitation.

At this moment, the ſpaſmodic affection, which conſtitutes that important diſeaſe called *triſmus* or *tetanus*, appeared in its ſimpleſt form. The patient's reſpiration was free and eaſy, her pulſe calm and natural. She was void of pain, and her mind in a ſtate of perfect compoſure. She complained, indeed, that, in the courſe of the preceding night, her reſt had been diſturbed by frequent and painful twitchings in the muſcles of the neck and arms, which had left thoſe parts, eſpecially the former, rather tender to the touch, and more than ordinarily ſuſceptible of impreſſions of cold. Theſe tremulous motions, however, were no longer perceptible, and, excluſively of the ſpaſm upon the jaws, which had now been cloſely locked nearly 18 hours, her feelings and appearance were thoſe of moderate health.

Denied acceſs to the ſtomach by the firmneſs of the ſpaſm and the perfect regularity of the patient's teeth, I was under the neceſſity of confining myſelf to the uſe of external remedies. A bliſtering plaiſter, extending all over that part of the temporal muſcle which is not covered with hair, and reaching downwards to the lowermoſt termination of the maſſeter muſcle, was accordingly applied to each ſide of the face, and another, very ample in its ſize, was adapted to the nape of the neck. An ointment alſo, compoſed of one ounce of the ſtronger mercurial ointment, and two drachms of finely powdered opium, was prepared, and an eighth part of it directed to be moſt diligently rubbed into the ſkin, at the inſide of the thigh and upper arm, every two hours.

September 16.—At 12 o'clock this morning, three drachms of opium, with a proportionable quantity of mercurial ointment, had been conſumed in the different frictions, which, I am ſatisfied, had been carefully performed. Not the ſlighteſt abatement of the ſpaſm has taken place. The jaws are now ſo cloſely locked, that I am not able to introduce the point of a very thin ſteel ſpatula between them. The preceding night was paſſed without ſleep, but quietly; no return of the twitchings in the neck or arms have occurred. A ſmall quantity of fluid jelly and of wine has been ſucked in between the teeth, but complaint is made of great difficulty in ſwallowing it, and of frequent and ſharp pains darting along the ſternum and at the ſcrobiculus cordis.

September 17.—This morning, appearances are ſtill leſs fa-

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vourable than yeſterday. The bliſtering plaiſter, which was applied to the nape of the neck, appears to have relieved, in a ſlight degree, the ſtiffneſs and ſoreneſs complained of in that part; but the ſpaſm upon the jaws remains unaltered. A painful ſenſe of heat is felt in the mouth and throat, and a very ſmall quantity of liquid nouriſhment has been ſwallowed with increaſed difficulty. The night was ſleepleſs and unquiet, reſt having been diſturbed by twitchings in the neck and arms, and her mind filled and haraſſed by frightful imaginations. The pain along the ſternum is conſtant and ſevere; that at the pit of the ſtomach peculiarly pungent. The frictions have been regularly and diligently made. The effect of the opium upon the ſyſtem is ſcarcely to be perceived; but the gums are manifeſtly affected by the mercury. The bowels have been relieved twice ſince the beginning of the complaint: the urine is ſmall in quantity, and voided with conſiderable pain.

At my viſit on the 18th, I found moſt of the ſymptoms of the preceding day ſtill more ſtrongly marked, and, in addition, Miſs E. complained of great uneaſineſs at the root of the tongue, accompanied by a conſtant feeling of fulneſs of the throat, ariſing to a moſt diſtreſsful ſenſe of ſuffocation whenever ſhe attempted to ſwallow the ſaliva, which was ſecreted in unuſual abundance. Slight convulſive motions of the muſcles of the face, particularly of the frontal muſcle, were now perceptible. Her breathing was ſhort and quick; her pulſe frequent and fluttering. During the night, which was ſleepleſs, and paſſed under great agitation of mind, ſhe was much annoyed by hiccup, which increaſed the ſeverity of the pain at the pit of the ſtomach. Her thoughts were perturbed and anxious; ſhe ſighed deeply and often, and the expreſſion of her countenance, which is naturally mild and cheerful, was grim and gloomy. Although ſhe made no reference whatſoever to the accident in her foot, when preſſure was applied this morning to the little ſpeck which I have already mentioned, the muſcles of the face and arms were immediately convulſed, and increaſed pain was felt about the throat and jaws. As ſoon, however, as the preſſure ceaſed, the muſcles of the arms became quieſcent, whilſt the twitchings of the face continued to recur at frequent and irregular intervals.

In this ſtate of things, a conſultation was requeſted, and Mr Martineau of this city, who was particularly known to my patient's friends by his ſucceſsful treatment of a ſimilar caſe in the neighbourhood of their reſidence, was called in. At our joint viſit on the 19th, we found appearances much the ſame as I have juſt deſcribed them. With reſpect to the treatment which had lately been purſued, I have to ſtate, that, ſince the morning of the 17th current, the mercurial frictions had been diſcontinued, in conſequence of their effects upon the ſalivary ſyſtem; but although ſimple lard having been ſubſtituted for mercurial ointment, the uſe of opium had been regularly perſiſted in. No advantage of conſequence appeared to have been derived from its application; the violence of the ſpaſm upon the jaws remained undiminiſhed, and the other ſymptoms of the diſeaſe had been gradually unfolded and eſtabliſhed. Indeed, with regard to the operation of opium in this caſe, its effects upon the ſyſtem were by no means conſpicuous, although, within the ſpace of 76 or 78 hours, no leſs a quantity than 10 drachms had been uſed. The pains at the pit of the ſtomach, and along the ſternum, were, however, ſomewhat relieved by the joint uſe of that medicine, and warm ſpirituous fomentations applied to the parts.

At the ſuggeſtion of Mr Martineau, it was determined to propoſe and make trial of cold affuſion. Its effects were beyond our moſt ſanguine expectations. Scarcely was the fourth handbaſon emptied on the head of our patient, when, heaving a deep ſigh, and fainting as the water fell around her, the ſpaſm diſſolved, and we had the ſatisfaction of beholding the jaws widely extended.

The ſhock upon the frame was exceſſively ſevere. In none of the inſtances in which I have had occaſion to employ this powerful remedy (they have, it is true, been uniformly caſes in which the temperature of the body was preternaturally high) has its influence in diminiſhing the action of the living powers been comparable to that which it diſplayed on the preſent occaſion. Reſpiration was ſuppreſſed; the heat of the ſurface, which, throughout the illneſs, had been moderate and natural, was extinguiſhed; the pulſe at the wriſt entirely ſuſpended; and, for a few ſeconds, a feeble fluttering of the heart ſeemed rather the harbinger of death than of renewed or reviving health. I confeſs I was a little alarmed at firſt: appearances, however, ſoon began to mend. Warm blankets were in readineſs, and a glaſs of hot wine having been ſwallowed, the patient was conveyed to bed, and frictions over the whole ſurface were immediately and diligently employed. In a very few minutes the powers of life revived. Reſpiration recommenced; the pulſe returned to the wriſt; the heat was gradually reſtored; and, after taking a ſmall quantity of nouriſhment, ſhe fell into a ſound ſleep, which laſted ſeveral hours.

On the following morning (the 20th of September), I found my patient in a ſtate certainly of extreme debility; but, in every other reſpect, her ſituation was very ſatisfactory. The jaws remained free from ſpaſm; the tremours of the face and arms had ceaſed; her mind was calm and ſerene, and the pains at the præcordia were much abated.

In ſhort, from this time, the progreſs of the cure was uninterrupted, and Miſs E. gradually recovered her uſual ſtate of health.

Such is the ſimple hiſtory of this intereſting diſeaſe. I purpoſely forbear to add any minute and unneceſſary remarks. I would, however, obſerve, in general, that if I am correct in the judgment which I have formed concerning the nature and orrigin of this affection (I readily admit that they are not indiſputable), another fact is added to our ſcanty experience on this ſubject; and, as far as a ſingle obſervation extends, we may henceforward proceed with increaſed confidence and ſucceſs in the treatment of that variety of *triſmus* which ariſes from local injury.

WILLIAM DALRYMPLE.

Norwich, April 1805.

V.

Remarkable Caſe of Tympanites. By JOHN CHARLES COLLINS, Sugeon, Swanſea, Member of the Royal College of Surgeons of London, and of the Medical Societies of Edinburgh and Guy's Hoſpital.

JANE DAVIES, aged 17 years, dark hair and complexion, was, about February 1803, ſeized with a violent pain in her right ſide, which continued for ſome days, when a ſmall tumour in the epigaſtric region, about the ſize of a large walnut, was obſerved, which was attributed to her drinking cold water when much heated by dancing. Being arrived at this period of life without ever having had any appearance of the menſtrual diſcharge, her mother gave her different kinds of herb tea without any effect, the ſwelling increaſing in ſize, and the girl becoming thin by conſtant pain on preſſure, ſhort cough, great thirſt, and loſs of appetite. In this ſtate I ſaw her in June following. The tumour was then of the ſize of a muſk melon, projecting immediately from under the elaſtic enſiform cartilage; no fluctuation ſenſible; great tenſion on preſſure, recovering its form inſtantaneouſly as a diſtended bladder; pain leſs than at firſt; pulſe quick and feeble; reſpiration difficult; complete loſs of appetite; indeed ſhe had ſubſiſted entirely upon warm beer for nearly five weeks before. The latter end of May there was the firſt appearance of the menſes, but without any viſible alteration as to the ſize of the tumour, or any of the other ſymptoms. She declares that, to the beſt of her recollection, ſhe never has been troubled with any unnatural diſcharge of wind, either upwards or downwards, ſince the tumour aroſe; though ſhe allows that formerly, when attending a bakehouſe, ſhe had been frequently diſturbed by involuntary diſcharges downwards, and which ſhe tried all in her power to check: this has, however, now entirely ceaſed. Eating vegetables, ſhe has obſerved, always gave her a greater ſenſation of fulneſs, and increaſed the ſwelling, as well as the difficulty of breathing, with a ſenſation of weight below the umbilicus, where there is not the leaſt enlargement, the parts rather partaking of the general emaciation. Her bowels are regular; ſhe is ſenſible at times of air moving within the inteſtines, apparently unconnected with the tumour. She never remembers having been particularly troubled with heartburn, but complains of conſtant chillineſs.

I immediately ordered her a warm purgative, and recommended a tight bandage; and the following day began to give her the ſulphas ferri and aſſafœtida, combined with the extract of gentian; and forbid her vegetables and malt liquors. The purgative produced a conſiderable diſcharge, but unattended with much wind, or any diminution of the ſwelling; and the pills produced little or no effect, excepting nauſea. I then changed the ſulphas ferri for the carbonas ferri; and not finding any effect produced by this, gave ſtrong doſes of the tinctura muriatis ferri, with intervening doſes of calomel, ſcammony, gamboge, and aloes, varying them according to circumſtances. This treatment was continued for a very conſiderable length of time, though I muſt confeſs my patient was not always regular in taking her medicines. About this time ſhe went to ſea in a ſmall boat, which made her extremely ſick, and induced much vomiting; her noſe bled, and ſhe was ſurpriſed to find, on her return home, her body diminiſhed almoſt to its natural ſize; but in two hours the ſwelling returned, ſhe thinks, with a greater degree of fulneſs. I could not diſcover whether ſhe had diſcharged much wind during the violence of the ſickneſs, for ſhe was ſo exhauſted as to be obliged to go to bed immediately, and ſtay there for ſeveral days; during which period there was a ſlight appearance of the menſes, but not in proper quantity; her pulſe was quick and low; ſhe nauſeated every thing. I now thought a few days would terminate the caſe; yet, in this ſtate, her friends urged her to try the profeſſional men at Briſtol; and as the ſea-ſickneſs had certainly once removed the tumour, was there ſtrength ſufficient left, ſhe might again receive benefit from it. She ſet ſail, and had her expected ſickneſs, but without any alteration upon the ſwelling, and, on her arrival, ſhe was again confined to her bed for a few days, after which ſhe waited upon ſome profeſſional men, who recommended her to the Medical Pneumatic Inſtitution, from which ſhe had received ſome medicines, but took but little of them, hearing from the people about her, that the medical men gave no hopes of her caſe. She was alarmed, and came home by ſea again with a recurrence of her ſickneſs, but without any benefit, the ſwelling being much increaſed in ſize. She now, with the advice of ſome friends, took myrrh and ſteel medicines again, but in much ſmaller doſes than before, and they produced little if any effect. Since that period, which is now ſix months, ſhe has been for change of air in the country, and although the tumour is moſt wonderfully enlarged, yet ſhe has acquired ſtrength, appetite, and fleſh; her monthly evacuations have been regular theſe four months; no cough, very little thirſt, bowels regular; and, in every reſpect, ſhe is better than ſhe has been for many years, if we except the ſwelling, which has now, for nearly theſe ſix months, extended into the right and left hypochondriac regions, almoſt to the vertebræ, large in its origin in the epigaſtric region, and tapering towards the vertebræ. At its centre, it is about the ſize of a quart baſon, or middling-ſized ſhaddock, and, at the extremities, of a man's arm above the elbow.

The moſt extraordinary circumſtances attending this caſe are, I think, the gradual increaſe of the ſwelling, the total want of effect in the medicines, the reduction of the tumour on the firſt ſea voyage, and the uniform extenſion of it around the body. The ſlow progeſs of the ſwelling may be accounted for, perhaps, by ſuppoſing that the air was gradually ſecreted from the minute blood-veſſels lining the inteſtinal canal. This Dr Bailey looks upon as one cauſe or means of its collection; yet how are we to account for its rapid return, after it had been removed by the firſt ſickneſs? That there was a diſcharge of wind during the exertion of vomiting may certainly be preſumed, although the only proof we have was the removal of the tumour. Dr Graves, in the Medical Facts, remarks the gradual increaſe of the tumour in his caſe, which he calls meteoriſmus ventriculi, and ſtates it as particularly marking this diſorder. The want of effect in the medicines I can ſcarcely conceive to be owing to the ſmallneſs of the doſes, which were as follows; from v gr. to xxv of the ſulphas ferri, x gr. to xxx of the carbonas ferri, and from v drops to xxxv of the tinctura muriatis ferri, every four hours. Perhaps, had ſome ſteel and carminative injections been made uſe of, they might have been of ſervice; but this the patient would not ſubmit to. The extenſion of the tumour around the body is perhaps one of the moſt ſtriking features in the caſe, and from it I am much diſpoſed to look upon it as a collection of air in the arch of the colon ſecreted by the veſſels, as before mentioned. Having no opportunity of examining a large collection of profeſſional books, I have not found any deſcription ſimilar to this in extenſion, which is further remarkable, that it has become more diſtinct ſince her improvement in health. Should this be found a juſt concluſion reſpecting the ſeat of the diſorder, we may, I think, with great propriety, call it *meteoriſmus coli.* Dr Monro, in his caſe, ſays, that ſeveral unequal protuberant balls were felt every where, but eſpecially at the ſides of the abdomen. I never could perceive or feel any in the above caſe, neither did my patient ever complain of the tumour ſpreading below the umbilicus. How far Dr Darwin's propoſal of introducing an unarmed pipe, and fixing it in the rectum, would be of uſe, I know not. Sharp, in his Practice of Phyſic, talks of tapping for this diſorder, but he evidently ſeems to confound it with aſcites; and Morgagni gives us ſeveral ſimilar caſes of the fatal effects of ſuch an operation: he mentions a caſe where the colon was ſo diſtended as to reſemble a bladder, and the ſuperior and inferior portions ſo contracted as to be impervious. There is alſo a caſe in the 2d vol. Med. Comm. ſuppoſed to have been produced by bark after an intermittent; but the formation of air in the ſtomach, when bark is given to weak habits, frequently happens, and is eaſily removed by joining carminatives with it.

However unpleaſant it is to relate to the public the reſult of unſucceſsful practice, yet ſuch obſervations frequently become valuable on future occaſions; and I would feel happy, if I thought the relation of this caſe ſhould ever afford one ſucceſsful hint to ſome future practitioner.

VI.

Caſe of Torpor from Cold, and ſome general Obſervations on the Effects of diminiſhed Temperature upon the living Syſtem. By George Kellie, M. D. Preſident of the Royal Medical Society, and Fellow of the Royal College of Surgeons, Edinburgh.

On the evening of the 26th February, I was requeſted by Mr Charles Cheyne, in the abſence of my friend Dr Cheyne, to viſit William Dennis, a lad of 16 years, belonging to the Glaſgow Packet, who had been found (as was ſuppoſed, dead) in a boat at the end of Leith pier.

He had, along with ſome companions, left the harbour about one o'clock, with the intention of taking a ſail in the roads; and on attempting to regain the harbour, between four and five in the evening, the boat grounded on the flats a little to the eaſt of the pier. His companions got aſhore, leaving him in charge of the boat, and promiſing to return to his relief ſo ſoon as they had refreſhed themſelves.

Two ſeamen, who were walking the pier ſome time after, obſerved him ſtretched out in the ſtern of the boat, as they imagined, aſleep; but, becoming alarmed, they went to his aſſiſtance about half paſt ſeven. He was found cold and inſenſible, and immediately tranſported to a neighbouring houſe, where we ſoon after ſaw him. When we arrived, he was ſtretched out, before the fire, on his back, with very little appearance of life; the whole body, with the exception of the face, which was well coloured, was of a deadly pale appearance, and very cold. The powers of ſenſation, and of muſcular motion, were completely ſuſpended. The head and limbs, perfectly flexible, fell lifeleſs to the ground, from whatever poſition they were raiſed to; the mouth was half open, and the jaw, obedient only to the hand, could be moved upwards and downwards, but returned to the half-cloſed poſition; the reſpiration was obſcure and inſenſible; but the pulſe was quite diſtinct even at the wriſt, though irregular and ſlow. The organs of ſenſe were equally inexcitable; a candle held cloſe to the expoſed eyes made no impreſſion, the eye-balls remained fixed and motionleſs; the pupils, though dilated, contracted irregularly, while yet expoſed to the light, in the way I have ſometimes obſerved them to do in the recently dead.

From every thing I could learn from the attendants, as well as from the natural and inoffenſive ſmell of the patient's mouth, I was ſatisfied that intoxication was here out of the queſtion. The moſt careful examination did not diſcover the ſmalleſt appearance of external injury; I concluded, therefore, that the ſymptoms had ariſen from the operation of cold. To this cauſe he had been many hours expoſed; the influence of the diminiſhed temperature of the atmoſphere had alſo been aſſiſted by moiſture; it rained; and the ſubject himſelf had previouſly ſuffered from fatigue and inanition; he had eaten nothing ſince the morning.

To excite the organs of reſpiration to the due performance of their almoſt ſuppreſſed functions, to aſſiſt the circulation, and to reſtore the heat carried off from the ſurface, were the obvious indications. With theſe laſt intentions were employed all the uſual means of communicating heat, and diligent frictions, with warm flannels.

Meanwhile the aſſiſtants, little ſatisfied with the ſlow effects of theſe means, were clamorous for the uſual practice, on ſuch occaſions, of opening a vein, to ſee if the patient would bleed, which was accordingly practiſed; about four ounces of blood trickled down the arm. A phial of aqua ammoniæ, which I had ordered, being now brought in, I directed my principal attention to the excitement of the muſcles of reſpiration, and it was with infinite ſatisfaction I perceived, on the very firſt trial, that I had theſe ſo much under my command. The firſt applications of the ammonia to the noſe occaſioned ſome retraction of the muſcles of the face, but did not produce any deeper breathing, or more perfect inſpiration. On pouring a little of it, however, on the breaſt and epigaſtric region, and rubbing it forcibly in with my hand, I ſoon had the pleaſure of obſerving the belly ſwell up from the violent and prolonged action of the diaphragm, and this ſucceeded by a proportionally full expiration. This was repeated at ſhort intervals with the ſame ſucceſs, the aſſiſtants being meanwhile unremittingly employed in chafing the body and limbs with warm flannels. Shortly the ammoniacal frictions of the epigaſtric region not only excited the uſual full inſpirations, but a writhing motion of the neck and ſhoulders, which could now alſo be reproduced by the vapour of ammonia applied to the noſe. Now, too, the pulſe began to riſe, to become more regular, and more frequent; and, in about an hour after my firſt endeavours, the jaw was obſerved to be more cloſed, to reſiſt a little the attempts made to open the mouth, and to return when the force was withdrawn. There was reaſon to expect he might now be able to ſwallow; the trial was made, but this power was found as yet too imperfect. At length, however, after ſeveral attempts, a few tea-ſpoonfuls of warm brandy and water were got down; and, by previouſly irritating the lips and tongue, this was repeatedly, and at ſhort intervals, effected. This gave great ſatisfaction to the attendants, and encouraged them to perſevere in the meaſures I was enforcing. About two hours from the time I was firſt called in, the life of my patient ſeemed ſecure; the reſpiration was no longer obſure, the pulſe was regular, full, and fluent, beating 100 in the minute; the heat of the face and cheſt had riſen, though the extremities were ſtill very cold. Warm bricks were applied to the feet, the body was covered with blankets, and the frictions of the limbs were continued. It was not till half paſt eleven, that is, after three hours unremitting labour, that the natural temperature could be ſaid to be generally reſtored. At midnight, when I left him, it was uniformly diffuſed over the body; the reſpiration was eaſy and natural; the pulſe full, and rather bounding; but the *coma* continued as profound as ever. In this ſtate he remained till three in the morning, when he awoke as if from the moſt natural ſleep, ſpoke to his father, complained only of thirſt, drank a baſon of tea, and again ſlept for a few hours.

I ſaw him at nine; he had juſt finiſhed his uſual breakfaſt, which he had taken with his cuſtomary appetite; complained of nothing but a little thirſt, and the excoriations produced by the ammonia; the tongue was clean; the pulſe 90, and ſoft.

He remembered that, when left by his companions in the boat, he felt cold, fatigued, and ſleepy; but, of all that had afterwards paſſed, he had not the ſmalleſt recollection.

Our knowledge of the nature of caloric, though ſtill imperfect, has of late been greatly extended by the diſcovery of ſome of the general laws which regulate its diſtribution, its affinities, combinations, and evolution. By theſe deductions, and by direct experiments, the phenomena of reſpiration, and the ſources and diſtribution of animal temperature, are better underſtood, while extenſive and accumulating obſervations on the influence of greater and leſs degrees of heat, and the alternations of theſe upon the energies of organized beings, vegetable as well as animal, in every ſtage of exiſtence, as in hybernation, germination, incubation, torpor, and excitement, enable us to reaſon and to ſpeak with more preciſion than formerly of the effects of temperatnre on the living ſyſtem.

Of the general exciting or ſtimulant power of heat, there can be no doubt. And with regard to cold, the diſputes concerning its operation have been perpetuated by logical illuſion only. In common language, we are accuſtomed to ſpeak actively of cold as of a poſitive and active energy, while philoſophy can acknowledge it only as the expreſſion of a relative decreaſe of temperature; for any degree of temperature deſignated by the appellation *cold* is ſtill heat.

A certain range of temperature is adapted to the due performance of the functions of organized beings. This range, however, is not the ſame for all. It varies with the capacities of different orders of beings, and even of the ſame orders under different circumſtances. Thus, many vegetables and animals annually periſh or become torpid from a diminution of temperature, which is yet ſufficient for the life and activity of a great many others; or one power of heat, which ſtimulates the energies of one claſs of beings, is inſufficient for another, with regard to which it is altogether negative. And this, whether we call the particular temperature heat or cold, is all that can be underſtood by the appropriated terms, ſtimulant and ſedative. The ſame temperature is, in this ſenſe, at once ſtimulant and ſedative; ſtimulant with regard to one order of beings whoſe energies are more excitable; ſedative with regard to another whoſe excitability is leſs. Stimulant or ſedative, however, are not properties of caloric. We cannot therefore ſay that any range of temperature is uniformly ſtimulant or ſedative, but we know that the effects of the ſame temperature will be poſitive or negative, according to the powers and capacities of the organized beings upon which it acts. This capacity of ſtimulation by caloric varies in different ſpecies, in the different individuals of the ſame ſpecies, and even in the ſame individual, at different times. Many vegetables and ſome animals periſh, languiſh, and become torpid, in the autumn, under temperatures by which, in the ſpring, they are excited to activity and life.

Within the limits of each appropriate range of temperature, the life and active vigour of the being is maintained. As the temperature deſcends, it ſtimulates leſs and leſs, till it reaches at length a point, at which it ceaſes altogether to have any effect. On the other hand, the temperature, carried too high for the powers of the ſyſtem, debilitates the individual, and deſtroys action, which may be again reſtored by reducing the temperature; and thus the abſtraction of caloric invigorates and produces excitement. In this way, the ſtimulant power of heat, the ſedative operation of cold, and what has been called its tonic power, are true in fact, and mutually reconcileable. The energies of organized beings are not conſtant but fluent quantities; the kind and degree of effect, therefore, which reſults from the operation of an external agent, will be as thoſe energies, and the powers of the agent conjointly, both of which are variable. To apply theſe general obſervations to the influence of cold, or diminiſhed temperature, on the human ſyſtem, we remark that, by theſe alone, the great variety of changes produced can be reconciled or explained. A certain decreaſe of temperature, which invigorates ſome, to which many acknowledge an increaſe of ſpirits, health, and activity, depreſſes the forces of others, and induces laſſitude, rigor, dyſpepſia, headach, catarrh: from greater changes ariſe rheumatiſm, pneumonia, the other phlegmaſiæ, and fever itſelf, according to the various prediſpoſition of individuals. In all, the general application of great or long-continued cold produces languor, laſſitude, faintneſs, debility of the voluntary powers, drowſineſs, torpor, and death. The caſe now detailed affords us an example of theſe effects carried the length of very complete torpor, from which, however, the patient was happily recovered. The temperature to which the individual had been expoſed was not, indeed, depreſſed to a degree generally incompatible with activity and life; but our patient was reduced by fatigue and faſting; the effects of the atmoſpheric cold were increaſed by the drizzling rain which fell; he lay inactive in the boat, and yielded without reſiſtance to the firſt propenſity to ſleep.

This ſtate of torpor, induced by decreaſed temperature, involves much intereſting inquiry. It is a change to which ſome animals are annually expoſed at the approach of winter; a ſalutary one, it would ſeem, which ſuſpends, during a ſeaſon of ſcanty ſubſiſtence, the active functions without deſtroying life, and preſerves to them the power of reſuſcitation with the return of vernal heat and plenty.

In paſſing into this ſtate, the irritability of the ſanguiferous ſyſtem ſeems firſt affected; the pulſations of the heart and arteries are languid and leſs frequent; the reſpiration, next affected, is performed more ſlowly; the internal heat falls below the natural ſtandard; the functions of digeſtion are ſuſpended; the powers of voluntary motion and of ſenſation gradually ſink, and at length the torpor becomes complete. In ſome, as in the amphibiæ and inſects, every faculty indicative of life is ſuſpended; even the functions of reſpiration and circulation are arreſted: In others, a languid circulation and reſpiration is for the moſt part preſerved.

In tracing the progreſs of reſuſcitation, we remark that the functions are revived nearly in the order in which they became torpid; the circulation and reſpiration firſt, and, gradually after, the activity of muſcular motion, is reſtored.

The progreſs alſo of torpor from cold, in man and other animals not ſubject to this annual ſleep, is ſimilar to that we have deſcribed as taking place in hybernating animals. But the capability of reſuſcitation is ſooner loſt; the torpor terminates rapidly in death, though there are not wanting examples of recovery, after long-continued torpor, even in men.

When an animal has been ſome time torpid, its temperature is throughout greatly diminiſhed, although, even in extreme caſes, this is ſomewhat above that of the atmoſphere. But, at the commencement and earlier period of torpor, there is reaſon to believe that the heat of the internal parts is little, if at all, diminiſhed. I regret that, in the caſe now before us, I had not an opportunity of aſcertaining more accurately, by thermometric obſervation, the internal heat; but, in ſo far as I could judge, while the ſurface was of the moſt deadly cold, the blood which flowed from the arm had preſerved its natural temperature. The bodies of animals are very imperfect conductors of caloric: we know there may be a great reduction of temperature of the ſurface, while that of the internal parts remains unchanged. Even a dead body loſes its heat very ſlowly, and not till after a much greater lapſe of time than is ſufficient to induce torpor in the living ſyſtem by the application of cold to its ſurface. And the inſtant reduction of the pulſe, in ſuch caſes, is perfectly incompatible with the notion of any change of temperature having been effected, either in the blood or in the propelling organs. So, when a perſon becomes torpid from cold, we cannot ſuppoſe that the cauſe has operated directly on every part affected. The torpor, indeed, of the ſkin and extreme veſſels is the immediate conſequence of reduced temperature; but the action of the heart and arteries is diminiſhed, the vigour of the internal organs is impaired, the voluntary and ſenſitive powers become torpid in regular ſucceſſion, without the immediate impreſſion of the firſt cauſe, and while the temperature of thoſe parts is little or not at all changed. Nay, in the caſe here related, the torpor of the voluntary powers continued ſome time after the natural temperature of the body was completely reſtored *.

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* This, perhaps, is not ſingular. It ſeems to have been the caſe, even in a greater degree, in other examples; as in the glaſs-eater, treated by Borelli. Lethargus a frigore. Petr. Borelli Centur. 1 Obſerv. 52 A.

" Amardus Coquus Caſtrenſis qui erat vitrivorax, ſeu impune vitrum vorabat, frigora nivis in itinere perpeſſus, incidit in lethargum. Per

The theories of ſympathy and of aſſociated motions are hardly adequate to an explanation of the phenomena of torpor from cold. There muſt here, as in other caſes, be a regular ſeries of events, a ſucceſſion of antecedents and conſequents in the relation of cauſe and effect, from the firſt to the laſt event, which it is the buſineſs of philoſophy to diſcover and enumerate. The narration is ſtill incomplete, from defective facts and limited obſervation. Some links of the chain, however, are perhaps within our reach. The terminations of the ſanguiferous ſyſtem on the ſurface of the body have their action immediately diminiſhed by the local abſtraction of caloric; the heart and arteries form one connected ſyſtem, conſtantly acting together, ſo neceſſarily dependent on each other, that whatever increaſes or leſſens the vigour of one part muſt increaſe or leſſen the activity of the whole; though the temperature of the heart itſelf be noway affected, its irritability is inſtantly diminiſhed by the abſtraction of caloric from the extreme branches of the ſyſtem. This is a conſtant event, an unbroken connexion of antecedent and conſequent. Phyſically ſpeaking, therefore, there is no room for farther inquiry here. But what is the order of ſucceſſion between this and the complete torpor of the voluntary muſcles, and of the organs of ſenſe? and how are the intervening events connected?

The powers of voluntary motion and of ſenſation are known to depend immediately upon the conditions of the brain and nerves; if, therefore, we could diſcover in what manner theſe organs are affected by any of the preceding events, we ſhould advance conſiderably the ſolution of the queſtions above ſtated. Were the inactivity of theſe organs the direct effect of their diminiſhed temperature; did the torpor, in no caſe, take place till the heat of the brain and nerves was reduced beneath the natural ſtandard, there could hardly be ground for any farther inquiry. But, as it is not ſo, ſome other change leſs direct muſt have occurred in conſequence of the connexion of the brain with, and its dependence upon, ſome other of the functions antecedently and more immediately affected; and this function I apprehend to be reſpiration, between which and the energies of the nervous ſyſtem

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Per *plures dies* inſtar mortui et cum metu ſuffocationis non mediocri fuit. Borellus adhibuit veſicantia, cucurbitulas ſcarificatas, ſternutatoria et tandem caſtorei ſcrupulos duos, et ſcammonii ſcrup. cum oxymellite pro duabus doſibus, et ſic ſanatus fuit."—*Sauvag. Noſol.*

Hybernating animals do not at once recover the complete uſe of their limbs: their motions are at firſt languid, ſlow, and weak; and it is probable that, before they are enabled thus with difficulty to creep from their retirement, the circulation and reſpiration had for ſome time been reſtored.

ſyſtem a very intimate connexion is maintained, through the changes produced on the blood during the pulmonary circulation. This dependence of the brain upon the properties of the blood, maintained by reſpiration, is evinced by a great variety of obſervations. Whatever impedes the reſpiratory changes of the circulating fluid debilitates or deſtroys the powers of muſcular motion, as the reſpiration of noxious gaſes, of reduced or rarified atmoſpheres; while greater exertions of muſcular power call for and give occaſion to more frequent reſpiration, more rapid conſumption of air, and greater changes of the blood; and the breathing of more effective gaſes, as of the nitrous oxyde, increaſes the motive and ſenſitive powers of animals. That theſe effects depend immediately upon the properties of the blood, as modified by reſpiration, acting on the brain, has, I think, been proved by the experiments of Bichât, who, in a maſterly manner, has traced the mutual connexion and dependences of the vital functions, in his admirable Recherches Phyſiologiques ſur la Vie, et ſur la Mort. The transfuſion or injection of venous blood into the carotids induced aſphyxia or death the inſtant it reached the brain, an effect which did not follow the ſimilar transfuſion of arterial blood: on the contrary, the dog ſubjected to experiment was recovered from aſphyxia by the transfuſion of red arterial blood from the carotid of another. By theſe experiments, and by various other obſervations, he has ſhown, that the aſphyxia, which ſo inſtantly follows impeded or ſuſpended reſpiration, is occaſioned by the impreſſion of dark, venous, unchanged blood upon the brain, and not, as has commonly been ſuppoſed, from this blood being incapable of ſtimulating the left ſide of the heart, which, on the contrary, continues to contract and to circulate the blood for ſome time after the voluntary functions are ſuſpended; an obſervation confirmed alſo by Coleman and others *.

Such, then, appears to be the connexion between the functions of reſpiration and thoſe of the brain. Now, in animals rendered torpid from cold, there are many obſervations which lead us to believe that the immobility of the nervous ſyſtem depends much, and very directly too, on the ſtate of reſpiration.

In the perfect torpor of the hybernating amphibiæ, reſpiration is completely ſuſpended, and the conſequent changes produced on

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* It is well known how eaſily inſects are deſtroyed, or rendered torpid, by cloſing their ſtigmata with oil. In caterpillars we can, in this way, experiment very inſtructively. Cloſe the whole of the ſtigmata, and you kill the animal; the ſtigmata of one ſide only, you induce hemiplegia; one half the ſtigmata of both ſides, paraplegia. The connexion between reſpiration and the motive organs is thus beautifully exemplified.

on the blood by that function, totally prevented. This, which appeared from a variety of obſervations on the winter-quarters of ſuch animals found imbedded in mud, or incaſed in ice, or cloſed up by opercula of their own conſtruction, for the occaſion of excluding the air, has been amply confirmed by the pointed experiments of Spallanzani, lately publiſhed by Sennebier.

In every caſe of torpor from cold, where the reſpiration falls ſhort of this complete ſuſpenſion, it is at leaſt more or leſs impaired. How much the torpid ſtate depends on this condition of the reſpiratory functions farther appears from obſerving, that hybernating animals, even thoſe not of the amphibious order, warned by the approach of winter, inſtinctively or induſtriouſly ſeek ſituations unfavourable to perfect reſpiration, where this function may be either inadequately or not at all performed, as by premature and voluntary interment under ground, in old walls, in mud, at the bottom of lakes, &c. The inſtinct of theſe animals too has been finely imitated by experiment, illuſtrating at once the object of this inſtinct, and confirming the opinion here advanced of its tendency. Thus the dormant hamſter was found to regain and preſerve its activity, when freely expoſed to a pure atmoſphere, the temperature, at the ſame time, not exceeding that at which it formerly became torpid, or at which it returned to that ſtate when again occluded under ground*. Theſe obſervations ſeem concluſive on this point, and, with thoſe already brought forward, confirming the general connexion eſtabliſhed between the properties of the blood as modified by reſpiration, and the functions of the brain, render it, I think, highly probable, that the torpor of the voluntary powers, in the caſes now under conſideration, is the conſequence of a limited and imperfect reſpiration, antecedently induced by diminiſhed temperature.

Obſervation, indeed, is more deficient on this point with regard to the higher order of animals, and to men, who only occaſionally become torpid from cold. Yet more than analogy, which is here very ſtrong, leads me to believe that, even in theſe, the functions of reſpiration are much and neceſſarily affected. The examples of cattle and of men remaining long torpid, deeply buried under ſnow, are pretty direct and convincing proofs of this. In the caſe above related, had this reaſoning been at the time familiar and preſent to my mind, I might have made ſome more deciſive obſervations, or experimentally examined the products of reſpiration. I remarked, however, without any alluſion to, or bias from the particular opinions now entertained, in noting the caſe, that the reſpiration was obſcure and inſenſible, though the pulſe was diſtinctly perceptible even at the wriſt. I have had neither time nor opportunity to conſult the authority of other caſes on this head; but from the terms aſphyxia, ſleep, torpor, reſemblance to death, uſually employed by writers, as well as by the vulgar, to denote the ſtate induced by extreme cold, and in the familiar narration of ſuch caſes, I conclude that the reſpiration is not hurried and rapid as in apoplexy, but obſcure and inſenſible, as above deſcribed.

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* Buffon's Natural Hiſtory.—*Hamſter.*

If our induction from all theſe obſervations be admitted, we have the rudiments of a theory adequate to the explanation of the phenomena, in ſo far, at leaſt, as the torpor of the voluntary powers is concerned.

From the ſuſpended or imperfect reſpiration, thoſe changes, by which the blood is fitted for maintaining the activity of the ſenſorial ſyſtem, are interrupted; this imperfect blood circulating ſlowly through the brain directly impedes its functions, and ſo debilitates the excitability of the motive and ſenſitive organs, that they become torpid. This enunciation may ſeem hypothetical; but let the proofs of the intimate connexion between the reſpiratory and ſenſorial functions be weighed; conſider alſo the interrupted reſpiration of hybernating and torpid animals, their inſtincts with regard to this, and the greater facility with which torpor is induced in a confined ſituation, which they naturally ſeek; and compare all theſe with the obſervations and experiments of Bichât on the effects of the immediate impreſſion of venous blood upon the brain, and you will perceive a connected ſyſtem, not entirely fanciful, a theory not without foundation and ſtrength, and which appears, to me at leaſt, to merit ſome attention. "A theory," it is well obſerved by an elegant writer and accompliſhed philoſopher, "a theory founded on experiment, and not aſſumed, is always good for ſo much as it "explains. Our inability to puſh it indefinitely is no argument "at all againſt it. This inability may be owing to our ignorance of ſome neceſſary mediums, to a want of proper application, to many other cauſes beſides a defect in the principles "we employ*."

It cannot therefore be fairly objected to the theory, that it removes the difficulties but one ſtep, and leaves the impeded reſpiration itſelf unaccounted for. It is good in ſo far as certain events in the ſeries are connected and explained. But we may farther

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* Burke's Inquiry into the Origin of our Ideas of the Sublime and Beautiful.

farther obſerve, that the changes which the blood undergoes during the pulmonary circulation depend greatly upon the actions of the extreme ramifications of the pulmonary veſſels, whoſe energy may be directly debilitated, and functions impaired, by the immediate abſtraction of caloric, as they are ſimultaneouſly expoſed to the ſame cold which acts upon the ſurface, or indirectly by aſſociation with the capillaries of the ſkin previouſly become torpid *.

. Theſe opinions will be confirmed, and the whole ſeries of changes, from the firſt torpor of the ſkin and lungs to the complete ſuſpenſion of the voluntary powers, be connected and illuſtrated by the theory, if, as there is now ſome reaſon to conjecture, the blood ſuffer changes at the cutaneous ſurface ſimilar to thoſe it undergoes in the lungs,—if there be a co-operation of the functions of theſe two organs in freeing the blood from carbon, hydrocarbonate, or carbonic acid †.

With regard to the method of treatment to be adopted in caſes of torpor from cold, I have but very few obſervations to offer. The principal indications to be kept in view, are, to communicate heat, and to excite the reſpiration and circulation, and the general means of accompliſhing thoſe are ſufficiently obvious. I do not think the ſame caution and reſerve neceſſary in the application of heat to a caſe of general torpor, as to benumbed and froſt-bitten limbs. In the latter occurrence, heat muſt be very gradually communicated; but we would not ſurely commence the treatment of a caſe of general torpor, nearly approaching to death, by applying ſnow to the body. There does not indeed appear to be the ſame danger of violent reaction, or of deſtroying, by premature ſtimulation, an accumulated excitability in general torpor, where the ſenſorial functions have been all along ſuſpended, as in a partial affection, where, notwithſtanding the injury done to a part, the general powers of the ſyſtem have remained excitable.

The patient may be ſafely brought into a warm room, provided it be, at the ſame time, well ventilated. He ſhould be immediately chaffed with warm flannels, nor need we fear placing his feet and legs in tepid or warm water.

The difficulty, however, of reſtoring the heat is much greater than

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* "Hence the capillaries of the ſkin firſt ceaſe to act, and become "pale and empty; next, thoſe which are immediately aſſociated with "them, as the extremities of the pulmonary artery, as happens on "going into the cold bath."—*Zoonomia*, vol. ii. p. 405.

† Eſſay on the Functions of the Skin.—*Edin. Med. Jour.* No. 2.

than might at firſt be ſuppoſed. The difficulty ſtruck me very particularly in the caſe I have here related; notwithſtanding the means employed, the temperature was very ſlowly reſtored, the ſurface and limbs long felt as cold as ever when the heating media were occaſionally withdrawn; and indeed the progreſs in this reſpect rather kept pace with, and ſeemed to be regulated more by the excitement of the reſpiration and circulation, than determined by the caloric communicated from without. Dr Currie recommends that the heat be applied to the epigaſtric region, by means, I think, of a bladder filled with warm water, which appeared to him more effectual in reviving the patients than any other. We cannot ſuppoſe that heat is more readily communicated to the ſyſtem from this point of the body than from others; but, applied to the epigaſtrium, it may act more directly as a ſtimulus to the diaphragm and heart. Indeed, to excite the action of theſe organs, I believe to be the object to which our attention and exertions ſhould be chiefly directed. For this purpoſe, when the body has been removed into a moderately warmed and well-aired room, while aſſiſtants are diligently employed in rubbing the trunk and extremities with warm flannels, the application of ammonia to the noſtrils, and to the epigaſtric region, will be found very effectual. Its good effects, in this way, were very memorable and ſtriking in our patient. As ſoon as the patient has ſo far recovered as to be able to ſwallow, it will doubtleſs be proper to give, from time to time, and by ſpoonfuls, ſome warm and gently ſtimulating drink. As to blood-letting, I regard the practice as uſeleſs, while the body is cold, and the circulation and reſpiration languid. If, however, after theſe functions and the natural temperature are reſtored, the patient ſhould remain longer than ours did in a comatoſe ſtate, with a bounding pulſe and high reſpiration, the propriety and neceſſity of venæſection can hardly be doubted.

Leith, 20*th May*, 1805.

VII.

An Account of the Morbid Appearances obſerved in two Caſes of Diabetes Mellitus. By Daniel Rutherford, M. D. Profeſſor of Botany in the Univerſity of Edinburgh.

CASE I.

Diſſection of John Robinſon.

Upon opening the body, a much greater quantity of fat was found, both under the ſkin and in the cavities of the abdomen and thorax, than might have been expected from the apparent emaciation of the body; indeed the ſkin was uncommonly thin.

In the abdomen the blood-veſſels all ſeemed unuſually large, and very much diſtended with blood. The omentum contained a conſiderable quantity of fat around large veins filled with black blood. The ſtomach and ſmall inteſtines were of natural ſize and appearance, except that, on the coats of the inteſtines, the veſſels were all very large, and diſtended with blood, even at their minuteſt ramifications, giving them exactly the appearance as if they had been well filled with a red injection. The coats of the ſmaller inteſtines ſeemed thicker and more pulpy than uſual. The colon was very large, and diſtended with air to the utmoſt; it formed a large doubling under the liver; throughout its whole length, contained very many little balls of hardened fæces. The meſentery was conſiderably loaded with fat. The veſſels were proportionally large and diſtended as thoſe of the omentum. The lymphatic glands were uncommonly large, ſoft, and red; their ſurface too was painted with many red veſſels, or with veſſels filled with red blood.

The liver, perhaps rather ſmall, was otherwiſe in every reſpect in the moſt natural ſtate, except that it lay far up under the edge of the ribs, preſſed thither perhaps by the diſtended colon. The gall bladder rather large and flaccid, yet containing a conſiderable quantity of very deep yellow bile. The pancreas was perfectly ſound and natural, and alſo the ſpleen, though perhaps rather large. The kidneys were much augmented in ſize, ſoft, with their ſurfaces painted with numerous veſſels. The veſſels were uncommonly dilated. The emulgent vein, *e. g.* of the right ſide, was not under $\frac{1}{4}$ of an inch in diameter, as it appeared diſtended with blood. The ureters alſo were conſiderably dilated; the bladder ſeemed capacious, its coats thickened; and it was half filled with liquid.

In the thorax there was a conſiderable quantity of fat in the mediaſtinum, and in the lower part eſpecially, running along the diaphragm. The lungs were apparently perfectly ſound; a few adheſions were obſerved betwixt them and the ſides of the thorax, and alſo betwixt them and the pericardium. The lungs in texture were perfectly right, or even perhaps more ſpongy and pervious to air than common. The heart of moderate ſize, flaccid and pale, though the coronary veins were greatly diſtended with black blood. The large cavities contained a conſiderable quantity of very dark blood, generally fluid, though ſome had coagulated ſlightly both in the right auricle and ventricle. In the interior mediaſtinum, in the ſite of the thymus, was a cluſter of glands altogether like thoſe of the meſentery, in ſeveral of which were calculous concretions, one not much ſmaller than a ſmall horſe bean. The proper glands of the lungs, thoſe ſituated at the ramifications of the trachea, were unuſually large, ſoft, and of a brilliant black colour.

The age of this man was between 40 and 50.

CASE II.

Diſſection of Ann Laidlaw, aged 9 *or* 10.

On external examination, every part of the body ſeemed to be much emaciated and reduced in bulk, except the abdomen, which was uncommonly diſtended with what was afterwards found to be air in the ſtomach and ſmaller inteſtines, and fæces collected in the larger ones.

When the muſcles covering the abdomen and thorax were thrown back, they ſeemed to be very ſlender, and of a rather more florid red colour than they uſually are in the healthy ſubject. The fat was entirely aboliſhed, nothing being left but the cells in which it was formerly contained. The lungs on both ſides adhered ſlightly in ſome places to the pleura coſtales; but, on the right ſide, beſides adhering everywhere very firmly to the pleura of the mediaſtinum, a quantity of coagulable lymph, of a yellowiſh colour, was found effuſed between the pleura of the inferior and middle lobes of the lungs and the mediaſtinum. On both ſides, the lungs were rather of a pale colour externally, but they felt firmer to the touch than in the healthy ſtate; and, on cutting into the ſubſtance of them, a puriform fluid was ſeen exuding from different places, although no diſtinct tubercles could be perceived, and there was little more than the common quantity of ſerum effuſed into either cavity of the thorax.

The pericardium contained about four ounces of a yellowiſh tranſparent ſerum. The heart was of the natural ſize, unuſually free from fat, and rather of a pale colour. The right ventricle very flaccid, the left firm and contracted. The internal ſtructure of the heart was natural, but, on opening the aorta, the inner ſubſtance of the anterior ſide of it was of a red colour, and the redneſs extended from the commencement of the aorta to that part where it paſſes through the diaphragm into the abdomen. The aorta below the diaphragm was, in every reſpect, in a healthy ſtate.

The pulmonary veins and vena cava did not appear to be any way diſeaſed; ſeveral of the bronchial glands were conſiderably enlarged; in particular, one on the right ſide, which reſembled a middling-ſized walnut, and contained a good deal of a browniſh ſubſtance, of a conſiſtence rather thinner than cheeſe. The trachea was perfectly natural.

The ſtomach was much diſtended with air, but, in other reſpects, had a healthy appearance, both externally and when it was laid open to examine the internal coat. The upper part of the inteſtinal canal was uncommonly diſtended with air, and, in ſome places, the blood-veſſels near the juncture of the meſentery were filled with blood, giving ſomewhat of the appearance of inflammation. The caput cœcum, the colon, and rectum, were everywhere filled with hard fæces, by which they were diſtended to a ſize far greater than could have been thought poſſible in ſo a young ſubject: in other reſpects they were healthy. The glands of the meſentery and meſocolon were enlarged; but, though very numerous, none of them had attained a ſize larger than a common bean ſomewhat flattened, and ſome of them nearly white. The omentum was ſmall, contracted, and completely free from fat. The kidneys were ſomewhat enlarged, their colour natural; but, on cutting into them, the *tubuli uriniferi* were fully more diſtinct than uſual, and the pelvis of each was alſo conſiderably enlarged: no other morbid change of ſtructure was perceived. The ureters were much larger than common, in ſome places being nearly half an inch, in other places more, in diameter. The right lobe of the liver adhered firmly to the diaphragm in many places; but, in other reſpects, both as to external appearance and internal ſtructure, it was quite ſound.

The gall bladder contained a ſmall quantity of light-coloured yellowiſh bile. The bladder was nearly empty, but of a natural appearance. The ſpleen, pancreas, uterus, fallopian tubes, and ovaria, did not ſeem to be any way diſeaſed.

VIII.

Caſe of Protruſion of the Tongue. By W. R. Clanny, M. D. Biſhop-Wearmouth.

On Thurſday, May 24. 1804, Ralph Heighington, five years old, was admitted into the Sunderland Diſpenſary. He had been much diſtreſſed with worms, and for this complaint he was put under my charge. He had every appearance of ſcrofula, ſuch as ophthalmia tarſi, and marks under the chin from ſcrofulous ſores, &c.; but what chiefly attracted my attention was his tongue, which was ſo much enlarged in length, breadth, and thickneſs, that it hung out of his mouth conſiderably below the chin. It had a very diſguſting appearance. The upper part of it was rugoſe, and indented with a few longitudinal fiſſures. The dentes inciſores were gone; and the few remaining molares were much diſeaſed, and ready to drop out. He could not utter a ſingle ſyllable, but appeared to underſtand every thing I ſaid to him. The tongue began to ſwell before he was a year old, and increaſed ſo rapidly as to prevent him from learning to ſpeak a ſingle word. By the uſe of a few vermifuge medicines, a large quantity of worms was expelled, and, with them, all the concomitant ſymptoms diſappeared. The tongue remained ſtill much the ſame, being protruded without the mouth about three inches. The more he endeavoured to pull it within his lips, the farther it appeared to be protruded. I thought it expedient to try the mode which M. Laſſus recommends, and which is detailed at length in the Medical and Phyſical Journal, vol. vi. p. 353. With much difficulty the apothecary of the Diſpenſary puſhed back the tongue, and ſhut the mouth; but, the moment he withdrew his hand, it burſt without the mouth the ſame as before. I ordered the tongue to be returned into the mouth, and retained there by means of a ſilk handkerchief, which was paſſed below the chin, and the ends firmly faſtened at the crown of the head. By this means the jaws were kept perfectly cloſe together. At firſt he appeared very uneaſy, but being relieved occaſionally by taking off the handkerchief for a few minutes, and replacing it again, he was enabled to bear it; and, in the courſe of five weeks, the tongue became of the natural ſize and appearance, and he could pronounce ſeveral ſhort words very diſtinctly. By theſe means a perfect cure was effected.

IX.

Flatulent Colick, with Hernia, cured by Opiates alone freely adminiſtered. By JAMES ROSS, M. D. Montroſe.

A GENTLEMAN, aged 60 years, of a healthy conſtitution, has been afflicted with a hernia on the right ſide upwards of 15 years. by wearing a good truſs conſtantly, he has hitherto prevented the deſcent of the inteſtine into the ſcrotum, except once, about half a year ago. He is naturally of a coſtive habit, and ſubject to flatulent colick. When this diſtemper attacks him, it occaſions a conſiderable diſtention of the abdomen, and obliges him to lay aſide the elaſtic bandage. A tumour is immediately formed, about the ſize of a ſmall hen's egg, by the protruſion of the inteſtine, and part of the omentum, through the ring of the abdominal muſcles. A moſt acute pungent pain is felt in the tumour, which pain extends itſelf over the whole abdomen; the legs and feet became very cold; the pulſe, naturally ſlow, riſes to about 90 in the minute. He feels, however, no thirſt, nor any ſickneſs at ſtomach. Warm flannel applied to the feet and legs give ſome relief.

Formerly I was very anxious to procure him ſome alvine evacuation, either by means of clyſters or purgatives thrown into the ſtomach, being afraid to give opium freely until he had had a ſtool. By this mode of treatment he was kept in great torment during 12 or 14 hours. Once or twice the coſtiveneſs reſiſted all medicines, and the diſtemper ceaſed without any alvine diſcharge; a circumſtance which I carefully noticed, and which led me to adopt a different plan. At the next attack of his diſeaſe, without regard to the coſtiveneſs, I gave him the following draught: ℞. Tinct. Opii Gutt. LX in Aq. Cinnam. Unc. 1. This medicine was thrice repeated, with the interval of an hour betwixt each doſe; after the third he fell aſleep, the hard tumour diſappeared, and he awoke next morning in perfect health. He has been relieved in this manner above 30 times, and ſuffers now very little from his diſtemper, which was formerly very dreadful to him.

I generally give an aloetic pill, or ſome laxative medicine, along with the firſt doſe of the laudanum, to prevent the coſtiveneſs which it always occaſions. This caſe naturally ſuggeſts the very free uſe of opium, not only in flatulent colick, which is already well eſtabliſhed, but even in the ſtrangulated hernia, provided it do not occaſion ſickneſs at ſtomach, which my patient never had from the uſe of it. If he, a little thin man, far advanced in life, could bear 180 drops of laudanum, pray, what is the proper doſe for the robuſt and athletic? Do we not often trifle in the exhibition of this moſt excellent medicine?

X.

THE INQUIRER, N° II.

On the Inexpediency of erecting Foundling Hoſpitals.

> "Down then with Foundling Hospitals, more noxious than pestilence and famine."—*Kames.*

THE attention of the medical philoſopher may often be extended with advantage to ſubjects which ſeem to lie beyond his province. Thus the application of public charity is worthy of his moſt ſerious conſideration, and ſo far as it is intended to relieve phyſical wants, or to remove moral evils by phyſical means, his intimate knowledge of the nature and conſtitution of man eminently qualifies him to direct how it may be moſt beneficially exerciſed. In the diſtribution of private charity, the individual is influenced by motives of humanity, or ſome momentary impulſe, and in this propenſity he may ſafely be indulged; for although oſtentation, or the deſire of getting rid of clamorous importunities, and removing diſguſting impoſtors, may ſometimes induce us to throw away what would have afforded effectual relief to objects more deſerving of aſſiſtance, yet private charity will ſeldom be ſo conſiderable or promiſcuous as to become a public evil. Beſides, that attention and ſympathy which commonly accompany individual charity more effectually command the gratitude, and improve the morals of the relieved, than the moſt liberal allowance from a fund on which they have a real or imaginary claim. But public charity requires the moſt active ſuperintendence, and the moſt unceaſing vigilance, to prevent it from becoming a public burden, and a public nuiſance. The delight we experience in indulging the feelings of humanity, the approbation of our fellow-citizens, and the appearance of utility in public inſtitutions, often induce us to ſquander immenſe ſums, for which no adequate benefit reſults to the community. As the various and numerous diſtreſſes of the poor far exceed any funds which could be collected for their relief, whatever is not applied in the beſt poſſible manner is miſapplied, and therefore, in their diſtribution, partial humanity muſt be totally diſregarded, and public utility alone conſulted.

The firſt object of charity, in all inſtances, is to perform the greateſt good with the leaſt means; whenever, therefore, a public inſtitution relieves any of the diſtreſſes of the poor more effectually and economically than if they were individually aſſiſted, and whenever the relief granted holds forth no temptation to increaſe the number of thoſe applying for it, or in the moſt diſtant way to encourage vice or idleneſs, then are public inſtitutions truly uſeful. Of this kind are almoſt all the inſtitutions for the relief of the diſeaſes and infirmities of the poor. No man will break a limb becauſe there is an hoſpital in which it will be ſet; nor will any man become deranged becauſe there exiſts a lunatic aſylum for his reception. On the contrary, public inſtitutions, whoſe objects might be more effectually and economically obtained by individual aſſiſtance, are at leaſt hurtful; and when they hold forth a temptation to increaſe the number of applicants, and to encourage vice and idleneſs, they became pernicious. On theſe principles, foundling hoſpitals have been already condemned by enlightened philoſophers. "Of all the miſchiefs," ſays Lord Kames, "which have been engendered by over-anxiety about the poor, none have proved more fatal than foundling hoſpitals."

As this opinion directly militates againſt the appropriation which has been made of a conſiderable fund towards the erection of a foundling hoſpital in Edinburgh *, a high degree of local and temporary intereſt is thus attached to an inquiry into the expediency of the meaſure. In a medical publication, its effects on population naturally form the principal object of inveſtigation; but theſe are ſo intimately connected with its influence on the morality and expenditure of the ſtate, that, in inveſtigating the former, frequent reference muſt be had to the latter.

The principal intention of foundling hoſpitals is to preſerve and educate, as uſeful citizens, children which might otherwiſe periſh from neglect or actual violence. Let us examine how far they attain this end. Children are moſt commonly deſerted ſoon after birth; for maternal affection is not yet confirmed by habit, and

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* We, &c. "do finally and unalterably reſolve to apply the free income ariſing from the reſidue of the ſaid eſtate for the pious and charitable purpoſes of preventing child-murder, and for an hoſpital within the city of Edinburgh for receiving, *ſecretly*, infant children, and bringing them up to be uſeful members of ſociety; and by receiving, privately, women big with child, and aſſiſting them in their delivery, ſo as to conceal their ſhame, and taking care of their children as foundlings."—Deed of Deſtination of the funds of Mr John Watſon, W. S. 13th Auguſt, 1764.

and at that time only can the hopes of concealment act as a motive, when children, at that tender age, are intruſted to the care of the community, the difficulty of rearing them is immenſe. What a feeble, helpleſs being is man at his entrance into this world! Rudely expelled from the womb, in which he received exiſtence, into an ungenial element, his firſt ſenſation is pain, his firſt cry the cry of ſufferance: With a frame tender and delicate, and a mind ſcarcely yet awakened, he is totally incapable of contributing towards his ſupport. Dependent on others for his preſervation, the human infant has little chance of ſurviving, when its numerous wants are not unremittingly ſupplied by maternal affection. In proof of theſe aſſertions, the hiſtory of all foundling hoſpitals may be adduced.

The moſt ancient eſtabliſhment of this kind was inſtituted at Montpellier in 1181, a part of the Hoſpital St Eſprit being appointed for the reception of deſtitute children. A ſimilar inſtitution was founded at Lyons in 1533. At that time it was the practice throughout Chriſtendom that an expoſed child remained the ſlave and perſonal property of the perſon who took it up and reared it. In the 17th century, the number of deſerted infants increaſed conſiderably; and in Paris they were found in the ſtreets helpleſs, and left to the mercy of thoſe who choſe to take them up. Their miſerable fate about 1638 excited the compaſſion of a rich widow, who cauſed them to be brought to her, and reared them in her houſe. For a time, this, like other undertakings of the ſame kind, was attended with ſucceſs; but the moſt ſhocking abuſes ſoon crept in. Her ſervants diſpoſed of theſe children at a fixed price. Many of them were ſold to beggars, who, by diſlocating their joints, and otherwiſe maiming them, endeavoured to increaſe the profits of their ſcandalous trade. In 1640 Louis XIII. to correct theſe and other flagrant abuſes, founded the foundling hoſpital at Paris, the moſt dreadful ſcene of butchery, ſays Girtanner, the world ever ſaw. Liancourt, in his report to the National Aſſembly, aſſerts, that, of the children admitted, two-thirds died during the firſt month, and of theſe, three-fifths before they were given to nurſe. Of 101,000 children admitted in the preceding 16 years, in 1790 only 15,000 remained. Before the 2d of George III. the mortality in the London workhouſes was equally great; and Mr Hanway mentions inſtances of every child received under a twelvemonth dying within the year. In 1791, Sir John Blaquiere ſtated to the Houſe of Commons of Ireland, that of 19,420 infants admitted into the Foundling Hoſpital of Dublin, during the laſt ten years, 17,440 were dead or unaccounted for; and that of 2180 admitted during 1790, only 187 were then alive.

In 1797, he got a committee of the ſame Houſe appointed to inquire into the ſtate and management of that inſtitution. They gave in their report on the 8th of May 1797; by which it appeared that, within the quarter ending the 24th March laſt, 540 children were received into the hoſpital, of whom, in the ſame ſpace of time, 450 died; that, in the laſt quarter, the official report of the hoſpital ſtated the deaths at three, while the actual number was found to be 203; that from the 25th March to 13th April, nineteen days, 116 infants were admitted; of which number there died 112. Within the laſt ſix years there were admitted 12,786; died in that time 12,651; ſo that, in ſix years, only 135 children were ſaved to the public and to the world. In the Charité of Berlin, where ſome enjoyed the advantage of being born in the houſe, and of being ſuckled by their mothers ſix weeks, ſcarcely a fourth part ſurvived one month. Every child born in the Hotel Dieu of Paris was ſeized with a kind of malignant aphtha, called *le muguet*, and not one ſurvived who remained in the houſe. At Grenoble, of every 100 received, 25 die during the firſt year; at Lyons, 36; at La Rochelle, 50; at Munich, 57; and at Montpellier even 60. At Caſſel, only 10 out of 741 lived 14 years. In Rouen, one in 27 reached manhood, but half of theſe in ſo miſerable a ſtate, that of 108 only two could be ſaid to be added to the uſeful population. In Vienna, notwithſtanding the princely income of the hoſpital, ſcarcely one in 19 is preſerved. In Peterſburgh, under the moſt admirable management and moſt vigilant inſpection of the Empreſs Dowager, 1200 die annually out of 3650 received. In Moſcow, with every poſſible advantage, out of 37,607 admitted in the courſe of 20 years, only 1020 were ſent out.

In ſome of theſe hoſpitals it is attempted to rear the children in the hoſpital itſelf; in others they are given out to nurſe in the country. Experience has decided in favour of the latter plan: It is leſs expenſive to the ſtate, the mortality is leſs, the children are more likely to become efficient citizens, and ſoon become uſeful to the people to whoſe care they are intruſted. It has, however, been objected, that it is almoſt impoſſible to superintend the treatment of the children, when diſperſed ſo widely; that there is great danger of ſpreading the venereal diſeaſe in the country, by giving out ſyphilitic children to nurſe; and that it will be impoſſible to find nurſes ſufficient, where the foundlings are numerous. Theſe objections, however, are not ſolid; for it will be more eaſy to find a ſufficient number of nurſes who will undertake the rearing of a child in their own houſes, than who will immure themſelves in an hoſpital; and if, to ſave the number and expenſe of nurſes, you commit to the care of each, in an hoſpital, ſix, five, or even four children, ſome of whom are generally diſeaſed, you condemn all to a ſlow and cruel death. The ſuperintendence of their treatment is of little conſequence; for it will be inſufficient to prevent it, if the nurſes feel not ſome affection for the child, and, where they do, it is unneceſſary. The propagation of the venereal diſeaſe is the moſt important objection, and is only to be obviated by careful examination and due precautions, until the health of the child be aſcertained. Though attended with theſe and other inconveniences, this method of aſſiſting theſe helpleſs beings is to be preferred; and accordingly we find it ſanctioned by the Britiſh Parliament, which, in 1761, paſſed an act for obliging all pariſhes within the bills of mortality to ſend all children under ſix years of age, within a fortnight after they were born in or received into the workhouſe, to a diſtance not leſs than ſix miles from London, to be nurſed until they are ſix years of age. Dr Price allows that this act prevented many deaths, and Mr Howlett reckons that a diminution of 2100 burials a-year has been occaſioned by it. Indeed, in nurſing-hoſpitals, the mortality is dreadful, the ſufferings of the infants extreme.

The cauſes of mortality, almoſt neceſſarily connected with foundling hoſpitals, are, inſufficient and unhealthy nouriſhment, want of cleanlineſs, cruelty and inattention of the nurſes, confinement, impure air, and want of exerciſe. But theſe cauſes, ſay the advocates for ſuch hoſpitals, may be all removed, and the mortality of foundlings reduced as low as that of infants in general. This, however, is merely the ſpeculation of ſome enthuſiaſtic philanthropiſts, and never can be realized, unleſs a nurſe can be procured for every child, and ſome means be found of imparting to her the feelings of a mother. The difficulty of procuring nurſes for the hoſpitals has been always ſeverely felt; three, four, five, or even ſix children, are often given to one woman to ſuckle; the whole are conſequently ſtarved and ſhrivelled; and ſhould one of them be diſeaſed, the whole are ſoon infected. At Marſeilles, it is the cuſtom to keep thoſe girls, who come to the hoſpital to be delivered, two years as nurſes. Several children are allotted to each of them, but, as long as their own children ſurvive, it is eaſy to foreſee what muſt become of the others. Beſides, the dread of ſuch a taſk frightens pregnant girls from entering the hoſpital; and, to this day, the inſtitution has completely failed in its principal object. In England, multitudes of children are brought up on the ſpoon, but all experiments of that nature in public hoſpitals have been unſucceſsful.

'Who can learn theſe facts,' ſays Oſiander, and not be wounded to the ſoul? who think of a foundling hoſpital without horror? It ſeems to be the fate of moſt of theſe unhappy foundlings, that while humanity endeavours to reſcue them from a violent death, it only collects them to protract their miſeries at an enormous expenſe. If we ſearch the records of foundling hoſpitals, we can hardly ſuppreſs the thought that the curſe of the Almighty reſts upon their walls, and that they are the abode of the deſtroying angel.

CHILDREN MURDERED HERE AT THE PUBLIC EXPENSE,

was inſcribed by a ſatyriſt over the gate of ſuch an hoſpital. Alas! it is almoſt true. What a preventive of child-murder, to ſnatch an infant from the knife, and kill it with ſlow poiſon! for what elſe is the milk of theſe nurſes, and the peſtilential vapour of theſe abodes?

What, then, are we to think of the influence of foundling hoſpitals on population? Are we to aſcribe to them the preſervation of the few who ſurvive, or are we to accuſe them of the deſtruction of the multitudes who periſh? Are we to accede to the eulogium pronounced on that of Moſcow by Mr Tooke, "That of all the children hitherto brought up in it, not the hundredth part would have been alive but for that inſtitution; and that conſequently, even in times of the greateſt mortality, it preſerves to the ſtate a very conſiderable number of young citizens?" Or are we to acknowledge the juſtneſs of the oppoſite opinion of Mr Malthus, "That if the children received into theſe hoſpitals had been left to the management of their parents, taking the chance of all the difficulties in which they might be involved, a much greater proportion of them would have reached the age of manhood, and have become uſeful members of the ſtate?"

The determination of theſe queſtions reſts on this ſingle circumſtance, Whether or not theſe children would have been deſerted, had no ſuch hoſpitals exiſted? Wherever it is conſidered as a crime, and conſequently as a diſgrace, in a parent to deſert her offspring, it will never be done unleſs to avoid greater evils; to eſcape the infamy attached to illegitimate pregnancy, or in conſequence of abſolute want of the neceſſaries of life. In the latter caſe, the crime may be prevented by cautiouſly extending relief, as in other caſes of poverty; but, in the former, the attention of the Legiſlature muſt be directed to the root of the evil, to correct the habits of licentiouſneſs from which it proceeds. Penal laws againſt illegitimate pregnancy will naturally increaſe the deſire of concealment, and the deſire of concealment may lead to the deſertion, or even murder, of the infant; but, by operating as a powerful reſtraint on licentiouſneſs, they render the original crime leſs frequent, and probably rather tend to diminiſh than to increaſe its eventual effects. All children deſerted in defiance of ſuch laws, or who become deſtitute by the death or total incapacity of their parents, have a right to the protection of the public; and as many of them as are thereby preſerved conſtitute an actual addition to the population of the ſtate. But inſtitutions for maintaining them under theſe circumſtances have no direct tendency to prevent child-murder, and ſhould not be confounded with foundling hoſpitals, properly ſo called, which authorize and facilitate the deſertion of children, with the intention of preventing child-murder. Now, what are the motives which lead to this unnatural crime? Are they not the deſire of concealing illegitimate pregnancy, or of eſcaping the labour of rearing the infant? So far as the latter motive is concerned, foundling hoſpitals operate as a direct tax on induſtry and virtue, and as a direct encouragement to idleneſs and vice; but if child-murder proceeded only from the former motive, foundling hoſpitals would have little effect in preventing it. For illegitimate pregnancy muſt either be infamous or not; in the one caſe, the ſame endeavours to conceal it would be uſed as if no hoſpital exiſted; and, in the other, there would be no deſire of concealment, conſequently no child-murder, from that motive.

But, for the ſake of proſecuting our inquiries, let us admit that foundling hoſpitals are as complete a preventive of child-murder as their advocates ſuppoſe; it is evident, that ſo long as illegitimate pregnancy is conſidered as diſgraceful, ſo long as the deſertion of children is conſidered as infamous, they will have no effect, unleſs the admiſſion into them be ſecret, indiſcriminate, and unlimited. Suppoſe it limited, the hoſpital full, and the baſket removed, what will be the conſequence? The deſertion of children having, till that moment, been authorized, they will be brought as before, depoſited on the ſtreet inſtead of the baſket, and the hoſpital muſt admit them, if they be diſcovered, before they have died of cold and hunger. If the admiſſion be not indiſcriminate, the concealment cannot be perfect; and to what claſs of women ſhall its benefits be confined? To the worthleſs? Certainly not. To the unfortunate victims of ſeduction? If it could prevent child-murder, yes. In London, in order to the reception of the child, the previous good character, the preſent neceſſity of the mother, and the deſertion of the father, muſt be inquired into, and whether it will be attended with the conſequence of her being replaced in a courſe of virtue, and in a way of obtaining an honeſt livelihood *. Such reſtrictions are laudable,

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* Account of the Foundling Hoſpital, page 62.

laudable, but they completely exclude thoſe moſt likely to maintain their reputation at the expenſe of ſo enormous a crime.

Wherever the reception is indiſcriminate, their effects are pernicious to the morals and happineſs of the people; they oppreſs the induſtrious by their expenſe, and they diminiſh population. The evils they neceſſarily produce are infinitely worſe than thoſe which they are intended to obviate. The dread of illegitimate pregnancy, and its conſequences, in the preſent ſtate of ſociety, is one of the moſt powerful ſafeguards of female chaſtity. Foundling hoſpitals, by removing in a great meaſure the fear of theſe, directly encourage licentiouſneſs, and, when pregnancy is the conſequence, the infant is always of courſe ſent to the hoſpital, and the mother deprived of the beſt means of atoning for her imprudence, and ſhowing the ſincerity of her repentance; means which ſeldom fail of reſtoring her reputation, and of enſuring to her, in her old age, the gratitude and protection of the child, whoſe preſervation ſhe accompliſhed, even at the riſk of perpetuating her ſhame.

But the effects of indiſcriminate admiſſion on the morals of the married poor are, perhaps, ſtill more to be dreaded. When we conſider the dangers to which the birth of a child expoſes the mother, the pains it inflicts, the exertions its maintenance requires from her yet enfeebled frame, the anxiety of mind, numerous inconveniences, deprivations of enjoyment, and augmentation of labour, which, among the lower orders of ſociety, are neceſſarily connected with its continuance in life, we muſt immediately be aware of the danger of diminiſhing the neceſſity of ſubmitting to theſe temporary inconveniences and increaſe of labour. Sir F. Eden, who has inveſtigated the ſituation of the poor with particular attention, obſerves, that "the terror which poor-houſes and workhouſes create operates more in preventing grown people from entering them themſelves, than from conſigning the younger part of their family thither. It is, perhaps, not an unnatural courſe for a mother to abandon her child to the pariſh-officers, who, ſhe is aſſured, will provide for it, for ſome years at leaſt, better than ſhe poſſibly could; more particularly when that child is the fruit of an illicit amour, and when, by leaving it at the workhouſe, ſhe can often ſcreen her character from detection. Conſidered in this point of view," he concludes, "the poor laws may be ſaid to offer an encouragement to debauchery."

Foundling hoſpitals, in this way, tend to looſen the ties between parent and child, the chief ſource of happineſs and virtue among the poor, and by holding forth temptations to the idle and indolent, too powerful for their reſiſtance, ſeduce many of them to deprive themſelves for ever of the greateſt conſolations of their lives, and of the ſupport of their old age and infirmities; the community thus drawing on itſelf the ſupport of the parents as well as of the children. "At every occaſional pinch for food, away goes a child to the hoſpital, and parental affection among the lower ſort turns ſo languid, that many who are in no pinch relieve themſelves of trouble by the ſame means."—And many a one, whoſe laſt moments might have been honoured by the tears of a virtuous family, is left to periſh unheeded in a workhouſe cell. "An occaſional child-murder, from falſe ſhame, is ſaved at a very high price, if it can only be done by the ſacrifice of ſome of the beſt and moſt uſeful feelings of the human heart, in a great part of the nation."

But theſe arguments, it may be ſaid, are merely the opinions of ſpeculative philoſophers: let us then bring them to the teſt of experience. In Peterſburgh, the annual births are about 17,550, of whom 3650 go to the hoſpital. In the diſtrict of Moſcow, the total births may be about 49,629, and in 20 years from the inſtitution of the hoſpital, 37,607 had been admitted into it. In Lyons, in the year 1772, 5320 children were born, of whom 977 were ſent to the foundling hoſpital. In the ſame year, the births at Paris amounted to 18,713, of whom 7676 were abandoned to the hoſpital; and of theſe, Buffon clearly proves that more than one half were legitimate children. It is alſo to be remarked, that there is a conſtant increaſe of the proportion of children deſerted. In Paris, the number of foundlings in 1670, 1680, 1700, 1740, 1749, 50, 51, 52, 53, 54, 55, 64, 65, 1772, and 1776, was 312, 890, 1740, 3130, 3775, 3785, 3783, 4127, 4329, 4231, 4273, 5560, 5495, 7676, and 6419, reſpectively. In London, in conſequence of the indiſcriminate admiſſion of children not exceeding two months being ſanctioned, "on the 2d of June 1756, the firſt day of general reception, 117 children were received. From that time to the 31ſt December 1757, 5510 children were admitted into the hoſpital;" and the admiſſion would probably, according to Sir F. Eden, have ſoon conſiſted of half the children born within 100 miles of the metropolis, but for the act of 1760.

Theſe facts indiſputably prove, that foundling hoſpitals increaſe the number of deſerted children; and as the mortality among foundlings is greater than among other children, we cannot refuſe our aſſent to the poſition of Mr Malthus, that "if a perſon wiſhed to check population, and were not ſolicitous about the means, he could not propoſe a more effectual meaſure than the eſtabliſhment of a ſufficient number of foundling hoſpitals, unlimited in their reception of children *." Of thoſe who ſurvive the hardſhips to which they are expoſed in ſuch places, the greater part are incapable, from bodily infirmity, to ſupport themſelves; and, with regard to their morals, Arthur Young has obſerved, that "foundling hoſpitals encourage that vicious ſpecies of procreation which does not deſerve the name of population; that the encouragement afforded by foundling hoſpitals is an encouragement of vice and inhumanity, and a public premium given to the baniſhment of the beſt feelings of humanity."

Another ſerious evil to be adverted to is, that, after they have been found by experience to be injurious, it is extremely difficult to put a ſtop to the evils they have introduced. The habit of deſerting children having been once allowed, is ſlowly renounced by thoſe whoſe morals it corrupted, and whoſe induſtry it has ſuppreſſed. On the 9th of February 1760, a committee of the Houſe of Commons, appointed to inquire into the effect of the indiſcriminate admiſſion of foundlings.

"Reſolved, That it is the opinion of this committee, that the general admiſſion of all children indiſcriminately, under a certain age, into the hoſpital for the maintenance and education of expoſed and deſerted young children, to be maintained there at the public expenſe, has been attended with many evil conſequences, and ought to be prevented.

"Reſolved, That it is the opinion of this committee, that no children ſhould be received into the hoſpital for the maintenance and education of deſerted young children after 25th March next, to be maintained there at the public expenſe."

There were at this time above 6000 children on the eſtabliſhment, almoſt all of them under five years of age; and, notwithſtanding the ſtrong reſolutions of the Commons, "ſix years paſſed before the number was reduced ſo low as 4300; and it was not till after the year 1769 that, by apprenticing all who could be placed out, they were reduced below 1000 †."

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* It muſt, however, be remarked, that foundling hoſpitals only diminiſh the actual population *directly*, by increaſing the comparative mortality of the children who are born; *indirectly*, they probably tend to augment the actual population by removing one of its greateſt checks, the care of providing for our offſpring. But this view of the ſubject is the moſt fatal of any to the opinions of thoſe who think foundling hoſpitals deſerving of ſupport, as a means of preventing child-murder; for, in this way, they operate upon the ſame principle as the permiſſion of child-murder, from which it only differs in the enormous expenſe, and protracted cruelty with which they are attended.

† Account of the Foundling Hoſpital, p. 33.

If the facts and arguments already adduced be at all concluſive with regard to the injurious effects of foundling hoſpitals on the population and the morals of the people, it may appear ſuperfluous to have recourſe to any financial argument; but probably few of the advocates for foundling hoſpitals are at all aware of their enormous expenditure, or how many extenſive and unequivocally uſeful charities it would be ſufficient to ſupport.

The foundling hoſpital at London, from its commencement to December 1757, placed out only 105 perſons to do for themſelves, in return for an expenſe of 166,000*l.* being 1571*l.* each perſon! In 1760, it required an income of above 45,000*l.* for its ſupport; and its total expenſe for the ten years preceding 1770 could not be leſs than 525,000*l.* of which 495,000*l.* were granted by Parliament. In 1753, its income was only 1050*l.* and its expenſes 5000l. Beſides a tax of 1s. 4d. a-pound on the rent of houſes in Dublin, the Iriſh Parliament has at different times granted 158,696*l.* towards the payment of the debts of the Foundling Hoſpital in Dublin. From a foundling hoſpital in a reſpectable German principality, after twenty years perſeverance, only one foundling reached the years of manhood, at an expenſe to the ſtate of 20,000 dollars; a greater ſum, ſays Girtanner, than would have been ſufficient for the education of its hereditary prince. The current expenſes of the Peterſburgh hoſpital are, according to Malthus, 150,000*l.* annually.

From this inquiry it evidently appears that foundling hoſpitals are hurtful in every point of view, whether we conſider their effects on the morals, population, or the expenditure of the ſtate; and that, whatever objections may exiſt to the abolition of thoſe already eſtabliſhed, the Legiſlature, conſiſtently with their reſolutions of 1760, ought not to permit oſtentatious or miſtaken charity to introduce into any part of theſe kingdoms an evil of ſuch magnitude.

P. S. Since the firſt edition of this Inquiry was printed, we have met with a Report of the Hoſpital in London for the maintenance of poor infants, for it ſhould no longer be called a foundling hoſpital; and the following abſtract of it will ſhow the difficulty of rearing them, even under the moſt favourable circumſtances.

	In 6 Years ending 24th June 1796.	*In 9 Months ending 25th March* 1797.	*Total.*
Admitted, . .	12786	1454	14240
Given to parents, .	254	33	287
Apprenticed, . .	1148	205	1353
Dead, or unaccounted for,	12989	1302	14291

So that only one in about 11.8 are apprenticed out.

PART II.

CRITICAL ANALYSIS.

I. & II.

Les Lois eclairées par les Sciences Phyſiques, ou Traité de Médecine legale et d' Hygiène publique. Par **François Emmanuel Foderé**, Médecin de l' Hoſpice d' Humanitê, et de celui des Inſenſées, a Marſeilles. 3 tomes, 8vo. Paris, An. VII.

Médecine legale et Police médicale de P. A. O. **Mahon**, Profeſſeur de Médecine legale, et a l' Ecole de Médecine de Paris. 3 tomes, 8vo. Paris, An. x.

Whatever aid the ſcience of medicine can contribute towards the good of the ſtate, and the execution of its laws, has been by the Germans denominated State-Medicine; a new but not improper appellation for what has by ſome writers been denominated Medical Juriſprudence.

It comprehends both Medical Police and Juridical Medicine; the former conſiſting of the medical precepts which may be of uſe to the legiſlature, or to the magiſtracy; the latter being the aggregate of all the information afforded by the different branches of medicine, which is neceſſary for elucidating doubtful queſtions in courts of law.

Although, in the Juſtinian and even in the Moſaic code, there be ſome traces of juridical medicine, ſuch as determining the real period of birth, with a view to prevent the impoſition of ſpurious children, it properly originated with the code of laws enacted by the Emperor Charles V. under the name of *Conſtitutio Criminalis Carolina;* in which it is ordained, that the opinions of phyſicians ſhould be taken with regard to the danger of wounds, child-murder, murder, poiſoning, procured abortion, concealed pregnancy, &c. Theſe directions, and the impoſſibility which was found of determining many queſtions by ſimply legal means, induced ſome legiſlators to enjoin, that all tribunals and judges ſhould procure from ſworn phyſicians, appointed to this office, their opinions concerning theſe and ſimilar ſubjects.

Since that time it has been treated ſyſtematically by many learned men; ſuch as, Fortunatus Fidelis, Zacchias, Alberti, Hebenſtreit, Haller, Ludwig, Plenck, Metzger, and recently by the authors now before us, Foderé and Mahon. Numberleſs diſſertations have been written on all its parts; and, amongſt thoſe who have contributed to its advancement, we may reckon Ambroſe Paré, Blegny, Devaux, Louis, Petit, Bohn, Buttner, Morgagni, Camper, Hunter, and Gruner. Collections of caſes, illuſtrating its principles, have been made by Amman, Daniel, Bucholz, Pyl, Scherf, and Metzger, and profeſſorſhips for teaching it have been inſtituted in many univerſities.

The ſtudy of juridical medicine has hitherto been chiefly confined to the Germans, and the benefits reſulting from their labours have ſcarcely been in any degree communicated to other countries. In Britain, in particular, if we except the very imperfect elements of medical juriſprudence by Dr Farr, the heads of Dr Duncan's Lectures on that ſubject, and ſome obſervations in works connected with it, ſuch as the admirable treatiſe on Medical Ethics by Dr Percival, it has been almoſt entirely neglected. This is the more to be regretted, as juridical medicine ought to form the baſis of a part of our written code of laws. Every day deciſions are given in the various courts of juſtice founded on the opinions of medical men, but they remain ſcattered in voluminous records, and almoſt inacceſſible to thoſe whoſe duty it is to ſtudy them. For a ſyſtem of juridical medicine materials are not deficient. It is only neceſſary to collect and arrange them. Such a work would be of infinite advantage to the community at large. The judge would then be enabled to compare any medical evidence laid before him with that given by others on ſimilar queſtions; the medical man examined would be aware of any peculiarities in his opinions, and be prepared to explain them. Deciſions, ſo far as they are influenced by theſe, would gradually become uniform, and at laſt a code of medical juriſprudence, founded on precedent, if not on the principles of juſtice, would be formed.

Juridical medicine, founded on the laws of the animal economy, may be treated of either according to the principles of natural juſtice, or with a direct reference to the cuſtoms and laws of a particular country. The former, as being immutable and univerſal, is by far the moſt important; and as contributing towards ſuch an enlarged view of the ſubject, the works now before us, although peculiarly adapted to the juriſprudence and police of France, may be peruſed with advantage by the medical philoſophers of Britain. The arrangement choſen by theſe authors is founded on different principles. Prof. Mahon, after ſome general obſervations on the hiſtory and progreſs of juridical medicine, and the qualifications neceſſary for practiſing it, treats in ſucceſſion of impotence, defloration, rape, ſodomy, pregnancy, procraſtinated birth, illegitimate birth, abortion, and monſtrous births, doubtful conditions of the mind or body, mental derangements, pretended, concealed, and imputed diſeaſes, wounds, apparent death, violent death, inſpection of bodies, poiſoning, child-murder, drowning, hanging, and, laſtly, the art of drawing up reports; without any attention to the natural connexion of theſe ſubjects, or to the courts of juſtice in which each is commonly inveſtigated. Now, although it may be extremely difficult, or even impoſſible, to form an arrangement which may not be liable to many well-founded objections, ſtill the moſt defective muſt be conſidered as preferable to none, as it points out its own defects, and naturally leads to improvement. In our future remarks, we ſhall therefore follow Mr Foderé, our other author, who is extremely ſyſtematic, although, in attempting to render his work very complete, he includes in it many objects which do not ſtrictly belong to juridical medicine.

In an introduction of conſiderable length, he ſketches the hiſtory and progreſs of the ſcience; points out the manner in which it may be rendered practically uſeful, enumerates the qualifications required in thoſe who may be called on to make any report, and ſtates minutely every circumſtance to be attended to in drawing up reports. The chief obſtacles to the further improvement of juridical medicine he conceives to be, the ſeverity of the principles of criminal juriſprudence, and careleſſneſs in the ſelection of the medical men appointed to report. The former of thoſe evils happily does not exiſt in this country, where juſtice always leans to the ſide of mercy, the latter does in a very great degree; the reports of phyſicians, ſurgeons, and apothecaries, being often admitted, and even called for by authority of the court, on queſtions which fall properly within the cognizance of a different branch of the profeſſion, and of which they may comparatively be very ignorant.

The art of drawing up reports is by no means eaſy. It requires not only a perfect profeſſional knowledge, but a certain acquaintance with the forms of laws. The circumſtances principally to be attended to are, to ſtate the facts diſtinctly and perſpicuouſly, to omit nothing which may tend to elucidate the object of inquiry, to introduce no extraneous matter, and eſpecially to avoid all hypothetical opinions, and even reaſoning, when it does not immediately ſerve to place the facts in a more perſpicuous and ſtriking point of view. To aſſiſt the young practitioner, M. Foderé has ſubjoined various forms of reports. Prof. Mahon, with the ſame view, has given examples of reports in particular caſes, to which his editor, M. Fautrel, has ſubjoined ſome critical annotations.

M. Foderé divides juridical medicine into, 1*ſt*, Exculpatory or Incapacitating; 2*d*, Civil, and, 3*d*, Criminal.

The firſt treats of thoſe conditions of the mind or body which prevent the individual from being conſidered as a free agent, or render him incapable of fulfilling his duties towards ſociety. In both caſes, he ſhould be placed under the protection of the law; in the one, to prevent him from being oppreſſed by the execution of what he is unable to perform; and, in the other, to prevent him from injuring himſelf, his own intereſts, or thoſe of others. M. Foderé is therefore naturally led to inveſtigate the period at which puberty, majority, and ſenility, are ſuppoſed to commence; the various kinds and degrees of mental derangement; the attentions due to the delicacy of the female ſex, eſpecially when pregnant; feigned and ſuppoſitious diſeaſes; and the circumſtances conſtituting exemptions from military ſervice or puniſhment.

According to the law of Scotland, a child is in pupilage from its birth till the age of fourteen, if a male, and till twelve, if a female. Minority begins where pupilarity ends, and continues till majority, which takes place at twenty-one years, both in males and females. M. Foderé, however, is of opinion that puberty and ſenility are to be judged of by the phyſical and moral developement and decay of the individual, and not by any limited number of years. Some attention is alſo to be paid to the nature of the queſtion in which the determination of the ſtage of life is involved. For example, he thinks, that although a perſon of fourteen years may be perfectly conſcious of the criminality of murder, he is totally incapable of comprehending abſtract political crimes.

On the intereſting and difficult ſubject of mental derangement he enters at conſiderable length, and perhaps rather too unlimitedly. He notices all its varieties, and endeavours to explain them as depending either on excitement or collapſe of the ſenſorium. The whole of his obſervations on this ſubject, being derived from actual obſervation, are well worthy of peruſal.

Queſtions frequently occur in civil courts of juſtice, which can only be decided by a reference to the laws of the animal economy. The examination of theſe conſtitutes the ſecond part of M. Foderé's work. In the preceding part he conſidered man as an inſulated being, incapable of fulfilling his duties to ſociety, or not to be accounted a free agent. In the preſent, he regards him as forming a link of the great chain of ſociety, amenable to its laws, and reſponſible for his actions. He treats in ſucceſſion of the ſigns of virginity or defloration; of the requiſites for entering into the ſtate of marriage; of the circumſtances authorizing ſeparation or divorce; of conception and its conſequences; of pregnancy, real and ſuppoſed; of the ſymptoms indicating the death of the fœtus in the womb; of circumſtances indicating the real father in doubtful caſes; of the proofs of perſonal identity; and of the means of determining the ſurvivor of ſeveral individuals of the ſame family, who periſh by a common accident. Many queſtions connected with theſe ſubjects do not admit of any ſatisfactory ſolution on phyſical principles, and therefore are only to be determined according to the principles of natural juſtice. In the laſt caſe, for example, where huſband and wife, parent and child, die by ſome common accident, much ingenuity may be diſplayed to determine the ſurvivor, but almoſt always in vain. Upon no phyſical principles can it be determined unerringly, or even with any ſufficient degree of probability. The ſigns of defloration are little leſs obſcure. In ſome ſuſpected caſes we may find the proofs of an abſolute phyſical chaſtity; but the abſence of theſe marks will ſcarcely warrant us to conclude on the incontinence of the party, unleſs in combination with other evidence, moral or preſumptive.

All children born in wedlock are preſumed to be legitimate, according to the rule, *Pater eſt quem nuptiæ demonſtrant*. But this legal preſumption may be overruled in Scotland by a contrary proof, that is, by direct evidence that the mother's huſband could not be the father of the child. " The two principal grounds upon which this preſumption may be defeated, are, the huſband's abſence from the wife, and his frigidity or impotency. Impotency is of moſt difficult proof; and few or no inſtances have occurred, in this kingdom, of queſtions either of divorce or baſtardy, upon that medium. As to baſtardy on the head of abſence, the great difficulty is to fix the preciſe period of time backward from the birth of the child, at which, if the huſband be abſent from the wife, the child is to be deemed unlawful. The ſolution of this doubt depends on two queſtions, more proper for the diſcuſſion of phyſicians than of lawyers, viz. What time is neceſſary for the production of a living child? And how long a woman may continue pregnant before her delivery? But our Supreme Court has, from the favour of legitimacy, adjudegd, that, to fix baſtardy on a child, the huſband's abſence muſt continue till within ſix lunar months of the birth. As to the ſecond, a child, after the tenth month, is accounted a baſtard."*

baſtard [*]." The latter of theſe judgments, M. Foderé thinks, may frequently be unjuſt; and he adduces ſeveral ſtrong caſes in ſupport of his opinion. Three months after his own wife exhibited ſymptoms of pregnancy, he left her to join the army of Italy, and was five months abſent. His wife was not delivered until four months and a half after his return, and the child was very ſmall, and deſtitute of hair, although in other reſpects mature. As the authority of this example reſts entirely on the virtue of the wife, it will not be ſufficient to moſt people that it was not doubted by the huſband. But the following curious fact reſts on a leſs queſtionable baſis.

> ‘ Dulignac, longtemps chirurgien-major du régiment d'Asfeld, certifie auſſi que des trois derniers enfants dont ſa femme était accouchée, deux étaient nés à treize mois et demi de groſſeſſe, et le troiſième à onze mois. " Il faut," dit-il, " laiſſer aux maîtres de l'art le ſoin d'expliquer, s'il eſt poſſible, des phénomènes auſſi ſinguliers; mais je deſirerais qu'on ne niât pas le fait, ſi on ne peut en donner l'explication. Ce n'eſt point ici une femme et des collatéraux qui font leurs efforts pour embrouiller la naiſſance d'un poſthume dans le détours de la chicane; c'eſt un homme de l'art qui reconnait une groſſeſſe, à quatre mois et demi, par le ſigne le plus ſenſible, le plus certain, le plus évident, par le mouvement de l'enfant, dou la naiſſance n'arrive que neuf mois après."

Beſides theſe two circumſtances of impotency and abſence, which are allowed by lawyers to defeat the preſumption that the huſband is the father of the child, there is another which, though overlooked by them, is ſtill more deciſive; that is, when the appearance of the child evidently proves that its father muſt have been of a different race from the huſband; as when a mulatto child is born of a white woman, whoſe huſband is alſo white, or of a black woman, whoſe huſband is alſo a negro.

Dr Percival juſtly obſerves, that " phyſicians and ſurgeons are often called upon to exerciſe appropriate duties, which require not only a knowledge of the principles of juriſprudence, but of the forms and regulations adopted in our courts of judicature." As that enlightened philoſopher has confined his obſervations to the practice of the Engliſh courts, we truſt that an attempt to combine ſimilar information reſpecting the criminal law of Scotland, on the different ſubjects we ſhall have occaſion to notice in analyzing M. Foderé's work, will be received with indulgence, if not with gratitude, by our readers. We need ſcarcely ſay that Profeſſor Hume's excellent Commentaries on the Law of

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[*] Erſkine's Inſtitutes of the Law of Scotland, Book I. tit. 2. cap. 3. § 59.

Scotland, reſpecting the deſcription and puniſhment of crimes, are the ſource from which it is derived.

The crime of rape is juſtly deſcribed as one of the moſt grievous injuries which an individual can ſuſtain; being a robbery of that wherein a woman's honour, her place in ſociety, and her eſtimation in her own eyes, depend, and being alſo, in its perpetration, neceſſarily accompanied with great alarm and terror, and with actual violence to the perſon. By immemorial cuſtom, the puniſhment of rape is death. This crime is independent of the age of the female, of her ſituation; ſhe may be maid, wife, or widow; and even of her character and way of life, even though it were that of a public proſtitute. For conviction, it is neceſſary to prove, 1*ſt*, Actual intromiſſion, and 2*d*, The employment of force in its conſummation; but it is held as forcible knowledge, if the female diſcontinue her reſiſtance out of fear of death, or be rendered incapable of it by the adminiſtration of narcotic drugs, or be under the years of puberty. To elucidate both parts of this proof, profeſſional knowledge may therefore ſometimes be neceſſary; but, from the very nature of the crime, its forcible perpetration is rarely probable, unleſs when there is great diſparity of ſtrength, or other undue means have been employed, and its actual conſummation does not admit of phyſical proof, except in the caſe of the previous exiſtence of the ſigns of virginity, and even then it is uncertain and ambiguous.

M. Foderé is of opinion, that in moſt caſes, the puniſhment of rape with death, and, indeed, the law in general regarding ſexual connexion, are more gallant than juſt. He therefore thinks it would be juſt to diſtinguiſh rapes according to the various degrees of criminality, according as they were the ſimple effect of a violent attachment, of libertiniſm, and of libertiniſm aggravated by cruelty.

Procured abortion is a moſt unnatural ſpecies of murder; ſo much ſo indeed, that our lawgivers ſeem to have conſidered it as ſuperfluous to reckon it in the liſt of crimes. Mr Hume expreſsly ſays, that from the charge of homicide "is excluded all procuring of abortion, or deſtruction of future birth, whether quick or not; becauſe, though quick, ſtill it is only *pars viſcerum matris*, and not a ſeparate being, or ſuch of which it can with certainty be ſaid, whether it would have become a quick birth or not." In this inſtance our criminal law is certainly too lenient; for there can be no doubt of the enormity of the crime, and it is certain that it is ſometimes committed. It is no argument againſt the neceſſity of a ſtatute for preventing this crime, that, although frequently attempted, the means employed are either totally inadequate to the purpoſe, or are ſo violent as at the ſame time to deſtroy the mother, which brings it within the caſe of homicide. The ſtatute ſhould be made to include theſe attempts; for if its actual perpetration were neceſſary for conviction, in very few caſes only would it admit of phyſical proof, and the utmoſt ſeverity of the law ſhould await that profeſſional man who ſhould ſo far diſgrace his art as to become an hired aſſaſſin, and to employ the knowledge given him for the preſervation of the ſpecies as the means of deſtroying it. The difficulty of obtaining legal proof in caſes of child-murder, and the frequency of the crime at one period, gave riſe to the act of 1690, which obliges a jury to convict on certain preſumptions of guilt, without direct evidence of murder. The circumſtances ſelected for this purpoſe are, that the woman has concealed her ſituation during the whole period of pregnancy, and has not called for help to her delivery, and that the child is found dead or miſſing. In proſecutions in terms of this act, profeſſional men may be called to prove that the woman was actually pregnant, and has been delivered: on the other hand, the woman is entitled to bring proof that the birth was not ripe, but an abortion; though, if ſhe fail, the act preſumes that it was born alive. M. Foderé had treated of the proofs of parturition in a former part of his work; in the preſent he therefore confines himſelf principally to the circumſtances indicating whether the child was born alive, or was ſtill-born; and, laſtly, whether, if born alive, it died a natural death, or from omiſſion of neceſſary precautions, or from actual violence inflicted on its body. As, from the extreme ſeverity of our ſtatute, this crime is commonly proſecuted as ſimple murder, the laſt inveſtigation is of importance in this country, as well as in thoſe where no ſuch ſtatute exiſts. We need ſcarcely inform our readers, that although the experiment, whether the lungs ſink or ſwim in water, ſhould always be made with them both when entire and cut in pieces, it is not always to be depended on.

In ſuppoſitious birth, the circumſtances to be attended to in the report are, whether the woman has been delivered, and whether the age of the child correſponds with the alleged period of delivery.

In juridical medicine, a very extenſive ſignification is given to wounds, as under that appellation are included not only wounds, properly ſo called, but alſo bruiſes, concuſſions, fractures, diſlocations, burns, and every perſonal injury inflicted by external violence. Theſe may be followed either by death or by curable or incurable bodily injury. In the firſt caſe, it is the duty of the medical reporter to determine whether the death was or was not cauſed by the wound; and, in the others, to give his opinion of the probable event, that the accuſed may be allowed or refuſed his liberty on bail, or to inveſtigate the extent of the injury, to aſſiſt the judges or jury in eſtimating the damages to be awarded. For conviction in a caſe of homicide, it is neceſſary that the perſon die of the harm libelled, without its being aggravated by obſtinacy and intemperance on his own part, or by raſh and hurtful applications. The harm libelled muſt alſo be the certain cauſe of death, and not one circumſtance which, with others, may have contributed to the fatal event, but whoſe own proper operation cannot be aſcertained. It muſt likewiſe be the direct cauſe of death, at leaſt ſo far as the other ſupervening cauſes do not naturally and immediately ariſe out of it. On the other hand, it is ſufficient that the harm libelled be the evident and direct cauſe of death, even although the perſon on whom it was inflicted was already in a dying condition, or although, in more favourable circumſtances than thoſe in which the violence was offered, the injury might not have had a mortal iſſue, as from the impoſſibility of procuring proper ſurgical aid, or from the ſeverity of the weather, if the injury ſhall have been the cauſe of his remaining expoſed to it. Moreover, though death do not enſue for weeks or months after the injury has been inflicted, yet if it be of itſelf ſevere, and gradually get worſe and worſe, ſo that the patient plainly dies of it as a diſeaſe, this, in reaſon and in law, is the ſame as if he had died upon the ſpot.

The difficulty of this branch of juridical medicine is therefore apparent, as it requires a perfect knowledge of ſurgical prognoſis. To facilitate its ſtudy, ſyſtematic authors have made various claſſifications of wounds: M. Foderé, for example, firſt treats of wounds individually according to their ſituation in the body, then according to their particular nature, and, laſtly, according to what he calls *pour l'ordre judicaire*. He afterwards points out the ſupervening accidents which are to be diſtinguiſhed from the effects of the wound itſelf, and, laſtly, lays down rules for the examination of wounds both on the living and dead body, and for drawing up reports connected with them. In his juridical arrangement of wounds, he divides them into mortal and not mortal. The firſt claſs he ſubdivides into inevitably mortal, and generally mortal; and the ſecond into curable, but with ſome injury to the functions, and curable without any bad conſequence. Although M. Foderé's claſſification be leſs imperfect than many others, and although it may be of uſe to medical practitioners called on to report, we ſhall not follow it any farther, becauſe, in their reports, they muſt never allow it to appear that they were directed in their opinion by any artificial arrangement whatever. It has indeed been argued, that it is not enough to ſay that the perſon died of the wound, but that the wound muſt be characterized as mortal. But in this, as Mr Hume juſtly obſerves, the lawyers were taking advantage of the arrangement in books of ſurgery, where wounds are claſſed into ſuch as are and are not mortal, and endeavoured to argue, that wherever a perſon died of a wound not belonging to the mortal claſs, it muſt have been *ex malo regimine*, or through miſconduct. But the inſufficiency of theſe arrangements has been often proved: Thus, in the caſe of John Shaw, we find three phyſicians and two ſurgeons ſwear, that, "by the rules of their prognoſtics," the wounds received by James Houſton were mortal; whereas Houſton was alive, and purſuer in the very proceſs where theſe gentlemen deponed to this effect.

The means of diſcovering when poiſon has been exhibited is one of the moſt important, but, at the ſame time, one of the moſt difficult branches of juridical medicine. It is eminently uſeful, both for the purpoſe of enabling us to render effectual aſſiſtance to the individual who has been poiſoned, and of facilitating the conviction of thoſe who have exhibited it, or of exculpating thoſe unjuſtly accuſed of the crime. In every point of view, this is a dangerous and aggravated ſpecies of murder, not only on account of the difficulty of detecting it, but alſo of the deliberate malice with which it is perpetrated, its cruelty, and the impoſſibility of guarding againſt it. There is no ſuch thing as an abſolute poiſon; but the law has accurately defined what ſubſtances are to be conſidered as ſuch. "To bring a caſe under the deſcription of murder by poiſon," ſays Mr Hume, "it is not indiſpenſable that the ſtuff or ſubſtance adminiſtered be of that kind which is ordinarily known and diſtinguiſhed as a poiſon; if the circumſtances of the caſe yield pregnant evidence, on the whole, of the pannel's intention to deſtroy by means of it, which may not only appear from the known quality and common operation of the thing (as where arſenic is given, or verdigreaſe), but alſo from the exceſſive quantity or the frequent repetition of the doſe, being of a ſubſtance ſuch as hemlock, tartar emetic, and many others, which are uſed as medicines; and may alſo appear from the age or the condition of the patient to whom the compoſition is applied; as if a few drops of laudanum are given to a new-born infant, or if a perſon, for ſome ſlight complaint, is made to take large and repeated doſes of the very medicine the moſt ſuited to increaſe and aggravate it into a mortal illneſs." M. Foderé has taken much pains in forming a claſſification of poiſons; but the arrangement he has choſen is rather calculated for a natural hiſtory of poiſons, than to elucidate this branch of juridical medicine. If practicable, the beſt arrangement for this purpoſe would undoubtedly be one derived from their obvious effects on the living body, which, indeed, as well as the other characters by which they may be known, he deſcribes with ſufficient accuracy, when treating of the individual articles of his orders and claſſes. The moſt general pathological diviſion of poiſons is into acrid and narcotic; each of which claſſes is ſucceeded by a peculiar ſeries of morbid ſymptoms.

When either of theſe occur ſoon after eating or drinking, there is reaſon to ſuſpect the adminiſtration of a poiſon of the claſs to which they belong, and ſufficient grounds for a ſtrict inveſtigation. But ſimilar ſymptoms are produced by other cauſes; M. Foderé, therefore, very properly dedicates a chapter to thoſe cauſes of death which may be confounded with poiſoning. He then enters very fully into the means of proving it, and the precautions to be attended to by the profeſſional man to whom the inveſtigation is intruſted. The ſymptoms, the appearances of the body, both external and internal, may afford ſtrong preſumption; but, in fact, the only indubitable proof is the diſcovery of the poiſon itſelf, either in the ſtomach, in the matter vomited, or as applied in ſome other way to the body. Every thing in which it may be ſuppoſed to be preſent muſt be examined with the greateſt care, the ſmell, &c. accurately noted: if vegetable matters be found, the plant of which they are a part muſt, if poſſible, be determined; if mineral, they may be eaſily known by their chemical characters; and even when nothing particular is diſcovered, ſtill they ſhould be ſubjected to chemical analyſis, and their effects tried on a ſmall dog. This laſt method of diſcovering poiſon, however, only affords a ſtrong preſumptive proof, as different articles are poiſonous to different animals; the chemical proof is therefore to be always ſought in preference, and, in the preſent advancing ſtate of chemiſtry, it is daily becoming eaſier and more certain. Thus Morgagni was unable to tell whether a green fluid, found in the ſtomach of a woman ſuſpected to have poiſoned herſelf, was bile, or the expreſſed juice of mezereon leaves; a queſtion which now it would not be difficult to ſolve.

M. Foderé concludes this part of his work with treating of other kinds of violent death, and of the diſtinction between homicide and ſuicide. When a dead body is found in the water, it is neceſſary to inquire whether it was thrown in alive or dead, and whether it was thrown in againſt the will of the individual or not. The firſt queſtion is to be determined by the preſence or abſence of the appearances peculiar to this mode of the death; and the ſecond may receive ſome elucidation from the external marks of violence on the body.

With regard to death from hanging, the ſame queſtions naturally occur: "L'objet des raports dans la ſuſpenſion ou l'etranglement," ſays Profeſſor Mahon, "c'eſt de decider, 1. Si un homme dont on examine le cadavre, a été pendu mort ou vivant. 2. S'il s'eſt etranglé ou pendu lui-même, ou s'il l'a été par d'autres." The latter of theſe queſtions has been repreſented as frivolous in the Supplement to the Encyclopædia Britannica; and, with an amuſing degree of ignorance, it is added, that "we need not ſurely obſerve, that no ſuch leſſon was ever taught in any univerſity, or by any medical lecturer." As theſe erroneous aſſertions are made in a work of reputation, and in an article pretending to give an account of medical juriſprudence, we think it worth while to ſtate, that theſe queſtions are diſcuſſed by every lecturer on medical juriſprudence; and, for a proof of their importance, we muſt refer to the various caſes quoted by Foderé, in which the fate of the accuſed depended on the manner in which they were anſwered. Owing to ignorance of the importance of this very queſtion, the atrocious parricide Pourpre was acquitted, and the innocent and worthy Calas broken on the wheel. "Puiſſe cet example," ſays M. Foderé, ſpeaking of the latter, "paſſer de bouche en bouche, apprendre aux juges à être plus circonſpects, et aux officièrs de ſanté à ne jamais haſarder à faire des raports en matières graves, quand ils ne ſentent pas toutes les lumières requiſes. Ceux, qui ont rapportés dans l'affaire de Calas, n'étaient-ils pas auſſi coupables que les juges?"

From its very nature, it is evident how neceſſary a knowledge of this ſcience muſt be to every medical practitioner, who is liable to be called upon to illuſtrate any queſtion comprehended under it before a court of juſtice. On his anſwer, the fortunes, liberty, and even life of individuals often depend, both judge and jury regulating their deciſion by his opinion. On the other hand, while he is delivering his ſentiments, his own reputation is before the bar of the public. The acuteneſs of the gentlemen of the law is univerſally acknowledged; the verſatility of their genius, and the quickneſs of their apprehenſion, are rendered almoſt inconceivable by conſtant exerciſe. It is their duty to make every poſſible exertion for the intereſt of their client, and they ſeldom leave unnoticed any inaccurate or contradictory evidence. How cautious, then, muſt a medical practitioner be when examined before ſuch men, when it is their duty to expoſe his errors, and to magnify his uncertainties, till his evidence ſeem contradictory and abſurd? How often muſt he expoſe himſelf to ſuch ſevere criticiſm, if he be not maſter of the ſubject on which he is giving evidence, and have not arranged his thoughts on it according to juſt principles? On the other hand, he may deſerve and gain much credit by ſo public a diſplay of judgment and profeſſional knowledge.

Some acquaintance with this part of medical ſcience muſt be uſeful at leaſt, and ſometimes neceſſary, to judges and lawyers. They will thus be enabled to eſtimate how much they may depend on the opinion of any phyſician, and will know how to direct their queſtions ſo as to arrive at the truth, and to avoid being miſled by his partiality or favourite opinions. To the lawyer who conducts the defence of an accuſed perſon in a criminal caſe, it is almoſt indiſpenſable; without it, he cannot do juſtice to the cauſe of his client; and the duty of the coroner in England conſiſts almoſt entirely in deciding queſtions of juridical medicine.

[This article has already extended to ſo great a length, that we muſt delay, to a future opportunity, the obſervations we meant to have made on the ſecond and more important branch of this ſubject, Medical Police.]

III.

Facts intended to prove the Yellow Fever not to be contagious, and Inſtances of its ſuppoſed Contagion explained upon other Principles.

By Benjamin Rush, M. D. Profeſſor of Medicine in the Univerſity of Pennſylvania.

[See Medical Repoſitory, vol. vi. p. 155. 8vo. New York. 1803.]

The editors of the American Medical Journals, and moſt of their correſpondents, ſeem to be decidedly of opinion that the yellow fever is *not* contagious. To give ſome idea of the evidence on which an opinion ſo contrary to European belief is founded, we have ſelected the preſent paper, both on account of the celebrity of its author, and becauſe it gives a connected view of the arguments by which he was induced to deſert the ſect of *contagioniſts*.

He obſerves, that when fevers are communicated from one perſon to another, it is either by means of ſecreted or of excreted matters. In the former way the ſmall-pox and the meaſles are communicated; in the latter the jail, ſhip, or hoſpital fever. The perſpiration, by acquiring a morbid and irritating quality, in conſequence of its ſtagnation and confinement to the body in a tedious jail fever, is the principal means of its propagation. It is confined to ſailors and paſſengers in foul and crowded ſhips, to priſoners and patients in foul and crowded jails and hoſpitals, and to poor people who live in ſmall and damp confined houſes. It prevails chiefly in cool and cold weather, is never epidemic, and is not communicated more than a few feet from the ſick, unleſs by means of clothes worn by them. It has been but little known in the United States ſince the revolutionary war, but has now and then appeared in ſhips crowded with paſſengers from different parts of Europe. It is a common diſeaſe in the manufacturing towns in Great Britain, and has frequently been confounded with the Weſt Indian and American yellow fever, which differs from it in prevailing chiefly in warm climates and ſeaſons; in being the offspring of dead and putrid vegetable and animal matters; in affecting chiefly young and robuſt habits; in being generally accompanied with a diſeaſed ſtate of the ſtomach, and an obſtruction or preternatural ſecretion and excretion of bile; in terminating moſt commonly within ſeven days; in becoming epidemic *only* by means of an impure atmoſphere; and in not furniſhing ordinarily thoſe excretions which, when received into other bodies, reproduce the ſame diſeaſe.

That the yellow fever is not contagious in its ſimple ſtate, and that it ſpreads excluſively by means of exhalations from putrid matters which are diffuſed in the air, Dr Ruſh thinks evident from the following conſiderations:

1. It does not ſpread by contagion in the Weſt Indies. Dr Chiſholm ſtands alone among modern phyſicians in maintaining a contrary opinion.

2. The yellow fever does not ſpread in the country, when carried thither from the cities of the United States.

3. It does not ſpread in yellow fever hoſpitals, when they are ſituated beyond the influence of the impure air in which it is generated.

4. It does not ſpread in cities from any ſpecific matters emitted from the bodies of ſick people.

5. It generally requires the co-operation of an *exciting* cauſe with miaſmata to produce it; which is never the caſe with diſeaſes univerſally acknowledged to be contagious.

Dr Ruſh next proceeds to explain the ſeeming exceptions to theſe aſſertions.

1. A patient being attended in a ſmall, filthy, and cloſe room.

2. A perſon ſleeping in the ſheets, or upon a bed impregnated with other ſecretions, or being expoſed to the ſmell of foul linen, or other clothing of perſons who had the yellow fever. The

diſeaſe, in theſe caſes, Dr Ruſh thinks, is communicated by their putrefaction in the ſame way as from other animal matters.

3. The protraction of yellow fever to ſuch a period as to diſpoſe it to aſſume the ſymptoms, and to generate the peculiar and highly volatilized exhalation from the pores of the ſkin, which takes place in the jail fever.

4. Miaſmata, whether from marſhes or other external ſources, acting upon a ſyſtem previouſly impregnated with the excreted matters which produce the jail or ſhip fever.

5. The exhalation from the excretions of a patient in yellow fever, acting as an exciting cauſe in perſons previouſly impregnated with the marſh, or other external miaſmata which produce it.

6. The laſt inſtance of ſuppoſed contagion of the yellow fever is ſaid to ariſe from the effluvia of a putrid body that has died of that diſeaſe.

But Dr Ruſh is not ſatisfied with proving, as he ſuppoſes, that yellow fever is never excited by contagion; he ventures one ſtep farther, and tells us, that "we are *compelled* to reſort to certain noxious qualities of the atmoſphere, as the excluſive cauſes of the prevalence not only of that fever, but (with a few exceptions) of all other epidemic diſeaſes." Here he ſteps beyond the boundary of ſober induction, and enters upon the pathleſs field of hypotheſis. Much to his credit, however, he ſtops ſhort, and does not accompany his more enterpriſing guides, but candidly informs us, that we are as yet ignorant of the preciſe nature of thoſe qualities in the air which produce epidemics.

That the yellow fever is propagated by means of an impure atmoſphere, at all times and in all places, Dr Ruſh infers from the following facts:

1. It appears only in thoſe climates and ſeaſons of the year in which heat, acting upon moiſt animal and vegetable matters, fills the air with their putrid exhalations.

2. It is unknown in places where a connexion is not perceptible between it and marſhes, mill-ponds, docks, gutters, ſinks, and other ſources of noxious air.

3. It is deſtroyed, like its fraternal diſeaſes, the common bilious and intermitting fevers, by means of long-continued and heavy rains.

4. It is completely deſtroyed by froſt.

This malignant ſtate of the air has been noted by all writers upon epidemics from Hippocrates down to the preſent day; and Dr Ruſh thinks it is to no purpoſe to ſay, its preſence has not been detected by any chemical agents. The eudiometer has in vain been uſed to detect difference between the noxious air of marſhes and the healthy atmoſphere of the neighbouring mountains. Theſe principles, according to Dr Ruſh, explain ſeveral facts, in the hiſtory of this diſeaſe, that are inexplicable upon the principle of its ſpecific contagion.

1. We learn the reaſon why, in ſome inſtances, the fever does not ſpread from a perſon who ſickens or dies at ſea, who had carried the ſeeds of it in his body from a ſickly ſhore. It is becauſe no febrile miaſmata exiſt in the bodies of the reſt of the crew to be excited into action by any peculiar ſmell from the diſeaſe, or by fear of fatigue, and becauſe no morbid excretions are generated by the perſon who dies.

2. We learn the reaſon why the diſeaſe ſometimes ſpreads through a whole ſhip's crew, apparently from one or more affected perſons. It is either becauſe they have been confined to ſmall and cloſe births by bad weather, or becauſe the fever has been protracted to a typhous or chronic ſtate, or becauſe the bodies of the whole crew are impregnated with morbid miaſmata, and thus prediſpoſed to have the diſeaſe excited in the manner that has been mentioned.

3. From the facts that have been mentioned, we are taught to diſbelieve the poſſibility of the diſeaſe being imported in the maſts and ſails of a ſhip, by a contagious matter ſecreted by a ſailor who may have ſickened or died on board her, on a paſſage from a Weſt India iſland. The death, in moſt of the caſes of contagion ſuppoſed to be imported in this way, occurs within a few days after the ſhip leaves her Weſt India port, or within a few days after her arrival. In the former caſe, the diſeaſe is derived from Weſt India miaſmata; in the latter, it is derived either from the foul air of the hold of the ſhip, or of the dock or wharf to which the ſhip is moored.

Dr Ruſh alſo thinks, that

> "It is a good practice to meaſure the truth or error of opinions in ſcience by the influence they are calculated to produce upon national, phyſical, and moral happineſs.
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> A belief in the non-contagion of the yellow fever, and of its being incommunicable except in one of the five ways that have been mentioned, is calculated to produce the following good effects:
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> 1. It will deliver the ſtates which have ſea-ports from four-fifths of the expenſes of their preſent quarantine laws and lazarettos. A very ſmall apparatus in laws and officers would be ſufficient to prevent the landing of perſons affected by the ſhip fever in our cities, and the more dangerous practice of ſhips pouring ſtreams of peſtilential air from their holds upon the citizens who live near our docks and wharfs.
>
> 2. It will deliver our merchants from the loſſes incurred by the delays of their ſhips by long and unneceſſary quarantines. It will, moreover,

moreover, tend to procure the immediate admiſſion of our ſhips into foreign ports, by removing that belief in the contagious nature of the yellow fever, which originated in our country, and which has been ſpread by the public acts of our Legiſlatures, and Boards of Health throughout the globe.

3. It will deliver our citizens from the danger to which they are expoſed by ſpending the time of the quarantine on board of veſſels in the neighbourhood of the marſhes, which form the ſhores of the rivers, or coaſts of quarantine roads. This danger is much increaſed by idleneſs, and by the vexation which is excited by ſailors and paſſengers being detained unneceſſarily fifteen or twenty days from their buſineſs and friends.

4. It will lead us to a ſpeedy removal of all the excretions, and a conſtant ventilation of the rooms of patients in the yellow fever, and thereby to prevent the accumulation and further putrefaction of thoſe exhalations which may produce it.,

5. It is calculated to prevent the deſertion of perſons in the yellow fever by their friends and families, and to produce caution in them to prevent the excitement of the diſeaſe in their own bodies by means of low diet and gentle phyſic, proportioned to the impurity of the air, and to the anxiety and fatigue to which they are expoſed in attending the ſick.

6. It will put an end to the cruel practice of quieting the groundleſs fears of a whole neighbourhood, by removing the poor who are affected by the fever from their houſes, and conveying them, half dead with diſeaſe and terror, to a ſolitary or crowded hoſpital.

7. By deriving the fever from our own climate and atmoſphere, we ſhall be able to foreſee its approach in the increaſed violence of common diſeaſes, in the morbid ſtate of vegetation, in the courſe of the winds, in the diſeaſes of certain brute animals, and in the increaſe of common, or the appearance of uncommon inſects.

8. A belief in the non-contagion of the yellow fever, and in its general prevalence from putrid animal and vegetable matters *only*, is calculated to lead us to drain or cover marſhy grounds, and to remove from our cities all the ſources of impure air, whether they exiſt in holds of ſhips, in docks, gutters, and common ſewers, or in privies, gardens, yards, and cellars, more eſpecially during the exiſtence of the ſigns of a malignant conſtitution of the air, mentioned under the preceding head. By theſe means, I believe (the aſſertion is not too bold a one), the yellow fever might be as effectually annihilated as the ſmall-pox will probably ſoon be by vaccination. A fever, the ſame in its cauſes, and ſimilar to it in many of its ſymptoms, that is, the plague, has been extirpated, by extraordinary degrees of cleanlineſs, from the cities of Holland, Great Britain, and ſeveral other parts of Europe.

You will perceive, from the facts and reaſonings contained in this letter, that I have relinquiſhed the opinion publiſhed in my account of the yellow fever in the years 1793, 1794, and 1797, reſpecting its contagious nature. I was miſled by Dr Lining, and ſeveral Weſt

India writers, in aſcribing a much greater extent to the excreted matters in producing the diſeaſe than I have ſince diſcovered to be correct. You will perceive, likewiſe, that I have changed my opinion reſpecting the manner in which the plague is propagated. I once believed, upon the authorities of travellers, phyſicians, and ſchools of medicine, that it was a highly contagious diſeaſe, generated chiefly by miaſmata from living but diſeaſed bodies. I am now ſatisfied this is not the caſe. It is the offspring, like the yellow fever, of exhalations from putrid vegetable and animal matters; but from the greater number of people who are depreſſed and debilitated by poverty and famine, and who live in ſmall and filthy huts * in the cities of the Ottoman Empire, that in the cities of the United States, I believe it to be more frequently communicated from an intercourſe with ſick people by the morbid excretions of the body, than the yellow fever is in our country. For my change of opinion upon this ſubject, I am indebted to Dr Caldwell's and Mr Webſter's publications upon Peſtilential Diſeaſes, and to the travels of Mariti and Sonini into Syria and Egypt. I reject, of courſe, with the contagious quality of the plague, the idea of its ever being imported into any country ſo as to become epidemic, by means of a knife-caſe, a piece of cotton, or a bale of ſilks, with the ſame deciſion that I do all the improbable and contradictory reports of an epidemic yellow fever being imported in a ſailor's jacket, or in the timbers and ſails of a ſhip that had been waſhed by the ſalt water, and fanned by the pure air of the ocean, for ſeveral weeks on her paſſage from the Weſt Indies to the United States."

It may appear preſumptuous in us, who have never ſeen an example of the diſeaſe in queſtion, to diſpute opinions which have been the reſult of too much experience; but in peruſing the various documents with which we are ſupplied by the anticontagioniſts themſelves, we think we perceive ſtrong evidence of the fallacy of their opinion, if the whole be not a diſpute about words. In the firſt place, we may obſerve, that it ſeems to have been originally conſidered as contagious by the moſt accurate obſervers of the diſeaſe. Thus Dr John Mitchell, whoſe deſcription of this fever, as it appeared in Virginia in 1741 and 1742, has been publiſhed in the Philadelphia Medical Muſeum, defines it to be "a peſtilential fever, proceeding from a contagious *miaſma ſui generis;*" on which the editor, Dr Coxe, takes occaſion to remark, that "it is to be remembered that this was written when *no doubt was entertained of the contagion of yellow fever.*" In autumn 1797, when the Governor of Pennſylvania conſulted the phyſicians of Philadelphia on the meaſures to be purſued to purify the city from any latent infection, and on the precautions beſt calculated to guard againſt the future occurrence of a ſimilar calamity, Dr Ruſh, and twelve other phyſicians who adhered to him, among other particulars, ſtated, that, "*5th*, The common bilious and yellow fevers are alike contagious, under certain circumſtances of the weather, and of prediſpoſition in the body. That the common bilious fever is contagious, we aſſert from the obſervations of ſome of us, and from the authority of many phyſicians who had long commanded the higheſt reſpect in medicine." By noticing this change of opinion in Dr Ruſh, which indeed he candidly confeſſes, we do not mean to accuſe him of inconſiſtency, but merely to ſhow that the circumſtances attending the communication of yellow fever are ſuch that, even to men whoſe judgment and opportunities for obſervation the anti-contagioniſts cannot doubt, they naturally ſuggeſted the idea of its being contagious.

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* M. Savary, in his travels, ſays, two hundred perſons live in Cairo within a compaſs that accommodates but thirty perſons in Paris.

But, before adducing any arguments for the contagious nature of yellow fever, it will be neceſſary to define what we mean by contagion. All diſeaſes which have the power of propagating themſelves, under certain circumſtances, from the diſeaſed to the healthy, we include in the claſs of contagious diſeaſes, whether they are communicable only by a ſpecific matter, as ſmall-pox, meaſles, cow-pock, and lues, or are alſo generated by other cauſes, as typhus; whether they affect the ſame perſon only once, as ſmall-pox, or repeatedly, as lues; whether the matter, which appears to be the immediate means of propagation, be conſidered as an excretion or ſecretion; whether it acts only when applied in ſubſtance, as in cow-pock, or through the medium of the atmoſphere, as in chin-cough, or in both ways, as in ſmall-pox; whether it be viſible, as in cow-pock and ſmall-pox, or inviſible, as in chin-cough and meaſles; and whatever its nature and chemical compoſition may be, whether acid, alkaline, or neither; whether contagion be conſidered as a property common to ſeveral kinds of matter, or a peculiar principle, capable of imparting that property to theſe kinds of matter. According to this idea, the contagious nature of any diſeaſe is a mere matter of obſervation, unconnected with obſcure inquiries, and involving no ſpeculative opinions. If theſe principles be admitted, Dr Ruſh himſelf has furniſhed us with abundant proofs of the contagious nature of yellow fever. He tells us that it has been propagated by attendance on a patient in a ſmall, filthy, and cloſe room in the country, remote from the place where it originated, as well as from every external ſource of putrid exhalations; but this ſtrong fact he attempts to explain away, by aſſerting that the excretions of the body thus accumulated undergo an additional putrefactive proceſs, and acquire the ſame properties as thoſe putrid animal matters which are known to produce malignant fevers. But of this additional putrefaction there is no proof; and all the other putrefying matters, in theſe ſmall, filthy, cloſe rooms, did not produce the diſeaſe, until a patient affected with it was lodged in them. The evident concluſion from this fact is, that the diſeaſe is contagious, but that, like other poiſons, it requires a certain degree of concentration to produce its effect. Dr Ruſh allows that it was once received in Philadelphia from the effluvia of a cheſt of unwaſhed clothes, which had belonged to a citizen who had died of it in Barbadoes: a ſimilar account of its introduction into an elevated and healthy ſituation near Portland, is ſtated in the 26th page of the ſame volume, by a decided anti-contagioniſt. Theſe facts are alſo aſcribed to putrefaction, but without any probability. The quantity of ſweat, or other excretions, could not poſſibly be ſo great as to induce ſuch effects by their putrefaction; nay, we doubt that they were capable of the putrefactive proceſs. To us they appear inſtances not only of contagion, but of imported contagion. Dr Ruſh allows that yellow fever becomes contagious when protracted to ſuch a period as to diſpoſe it to aſſume the ſymptoms, and to generate the peculiar and highly volatilized exhalation from the pores of the ſkin, which takes place in jail fever. He allows that yellow fever may be excited by the exhalation from the excretions of a patient in that diſeaſe, acting as an exciting cauſe in perſons previouſly impregnated with marſh, or other external miaſmata; in other words, in a body prediſpoſed to be affected by the contagion of yellow fever, it will produce that diſeaſe. Our readers muſt now ſuſpect that the anti-contagioniſts underſtand contagion in a much more limited ſenſe than we do; and ſuch is the fact. They attempt to diſtinguiſh contagion from infection; but the diſtinctive characters being taken from circumſtances which we have as yet no means of aſcertaining, any arrangement of diſeaſes on theſe principles muſt be entirely hypothetical. To enable our readers, however, to judge for themſelves, we have ſelected the following remarks on Dr Haygarth's doubts, whether typhous fevers are *always* produced by ſpecific contagion; and whether they are not alſo engendered in cloſe, dirty, crowded rooms, by peculiarities of ſeaſon, and the like.

"Herein Dr Haygarth is undoubtedly miſtaken. And the error is natural enough to perſons of but an ordinary ſhare of diſcriminating power. To ſuch, the words *contagion* and *infection* appear to be perfectly ſynonimous. By ſuch, *dirt* and *naſtineſs* are employed as convertible terms: and to ſuch there is no diſtinguiſhable difference between a poiſon *produced by morbid animal ſecretion*, as that of ſmall-pox, and one engendered by mere *chemical action in certain forms of inanimate matter*, as that of typhus. But by a mind accuſtomed to note the diverſified phenomena of nature, that *vitiated product of living vaſcular action*, which can excite in a well perſon a diſeaſe like that by which itſelf was produced, and continue indefinitely to do ſo after being transferred from one body to another, will be denominated CONTAGION; and lues, vaccinia, meaſles, and ſmall-pox, will be conſidered as examples of it. On the other hand, that *venomous offspring of putrefaction*, going on in ſome of the kinds of organic matter, *after death or ſeparation from the living frame*, which diſorders the healthy functions without being ſpecifically communicable, and without the power of communicating itſelf, will be called INFECTION; and typhus, dyſentery, plague, and yellow fever, will be given as inſtances. By a mind of this correct conſtitution, "dirty" will be underſtood to mean the collection of ſuch *mineral ſubſtances* as conſtitute the upper ſtrata of the earth, clay, ſand, duſt, &c. in the human body, in its clothing or habitation. "Naſty," on the contrary, will be employed to expreſs that condition of body, dreſs, bedding, houſe, and furniture, *induced by thoſe animal excretions and excrements* which conſtantly exude from the pores and ducts, and taint and envenom the ſubſtances to which they attach themſelves. A maſon's frock is a *dirty* thing; a beggar's blanket a *naſty* one. A houſe may be *dirty*, that is, it may have ſand ſtrewed about the floor, duſt reſting upon the furniture, aſhes ſprinkled over the hearth, and pieces of broken plaſter ſcattered along the ſtairs; and yet this houſe may not be unhealthy: but where a habitation is *naſty*, and the beds and bedding are ſaturated with urinous and perſpiratory diſcharges, the floors beſmeared with fæces and bronchial phlegm, and every thing porous and bibulous charged with ſomething convertible to ſtench and venom, the inhabitants muſt poſſeſs hardy conſtitutions indeed, if they can withſtand this combination, this confederation of miſchievous powers.

It is from *naſtineſs* degenerating to *infection*, by chemical changes among its particles, that the bodies, clothes, beds, and apartments of the poor in Great Britain derive their poiſonous, their peſtilential charge. In the books of phyſic, and in the lectures of its profeſſors, it has been faſhionable to call this virus *human contagion*, and its exhalations *human miaſmata*. As well might the contents of a jakes be called "contagion," or the reekings of a dunghill "miaſmata." It is a poiſon formed by inteſtine workings among the elementary ingredients of excreted and inanimate matter, and as diſtinct from the vaſcular energy, by which contagion is elaborated, as death is from life. There is not an atom of contagion in the caſe; for contagion, like other ſecreted fluids, is not imitable by any *artificial* proceſs, and cannot, any more than bile or ſemen, be prepared in a laboratory by ſyntheſis. By a common putrefactive proceſs, this SEPTIC VENOM is formed, and derives none of its qualities from pulſating arteries or glands. Away, then, with this prepoſterous phraſe from the poiſon engendered by *ſeptic proceſſes*, and let "human contagion" for the future mean nothing but ſmall-pox, vaccinia, and the kindred forms of *morbid ſecretions*.—It is high time that the products of putrefaction ſhould be diſtinguiſhed from thoſe of ſecretion."—*Med. Rep.* vol. v. p. 185.

But theſe obſervations are much more ſpecious than ſolid. The diſtinction, ſo far as it is founded on the difference of ſecretions and excretions, is nugatory. There is no excretion which does not derive many of its qualities from pulſating arteries or glands. They are all either elaborated by vaſcular energy, or largely mixed with true ſecretions. If putrefaction be eſſential to infection, and incompatible with contagion, it ſtill remains to be proved that the excreted matters are incapable of exciting the diſeaſe, except in the ſtate of putrefaction. What evidence is offered, that the effluvia of the body, in yellow fever, excite diſeaſe only in conſequence of becoming putrid, while, in ſcarlatina anginoſa, they always act before they are decompoſed? The products of putrefaction are nearly the ſame in all caſes; their action ſhould therefore be proportioned to their quantity: yet we will venture to aſſert, that the whole animal excretions adhering to the filthieſt ſet of clothes a yellow fever patient ever wore, would bear no proportion to the common putrefying matter, to whoſe action every individual, in whom they excited diſeaſe, had been repeatedly expoſed with impunity.

We ſhall offer at preſent no remarks on the "certain noxious qualities in the atmoſphere," to which Dr Ruſh is compelled to reſort to account for the effects of contagion. It is too vague an hypotheſis to admit of refutation, and we ſhall take ſome future opportunity of examining the ſeptic theory of Dr Mitchell.

We cannot, however, conclude theſe obſervations without condemning, in the ſtrongeſt manner, ſome of the laſt ſet of arguments uſed by Dr Ruſh, in oppoſition to the doctrine of contagion. They amount ſimply to this; by believing yellow fever, or any other diſeaſe, to be not contagious, we ſhall ſpare ourſelves the trouble of taking any precautions againſt its ſpreading by contagion: it will ſpare our ſtate the expenſe of quarantine eſtabliſhments: it will be highly advantageous to our merchants, and convenient to our ſailors. As well might he argue, that it would be convenient to believe that fire does not burn, or water does not drown. It is undoubtedly proper to point out the influence which any truth may have on the happineſs of mankind, and to expoſe the dangers of any error; but it is a very unfair and dangerous conduct to appeal to the paſſions of men, and to ſtate forcibly the advantages which would reſult from any opinion, if it were true, without, at the ſame time, warning them of the miſchievous conſequences which may reſult from it, ſhould it be falſe. Could any degree of freedom in commercial intercourſe compenſate for the valuable lives which were lately loſt at Gibraltar, in conſequence of the doubt or diſbelief at firſt entertained of the contagious nature of the diſeaſe, which almoſt depopulated that important fortreſs?

IV.

Obſervations on Cancer, connected with Hiſtories of the Diſeaſe. By EVERARD HOME, Eſq. R. R. S. Surgeon to St George's Hoſpital. 8vo. London. 1805.

THIS work is ſufficiently recommended to public attention by the very intereſting nature of its ſubject, and by the name of its author. To the obſervations of Mr Home we are glad to find ſome caſes and remarks added from the note-book of Mr John Hunter. It is not neceſſary to point out the value of any remarks from ſuch a ſource. Mr Home acknowledges, with becoming modeſty and reſpect, his obligations to the hints derived, both in writing and in converſation, from his celebrated relation, and he merely claims the merit of combining the reſult of his own obſervations with thoſe ſuggeſted by this very accurate obſerver. The obligation is therefore twofold, and the claims for approbation are extended in proportion to the celebrity of theſe two practitioners. The object of this publication is ſtated to be a deſire of aſſiſting in the diſcovery of the nature of cancer, and of the moſt effectual means to be adopted for its prevention and its cure. To accompliſh theſe deſirable ends, Mr Home conſiders it the moſt rational mode for every practitioner, who has had conſiderable opportunities for contemplating the diſeaſe under its different circumſtances, to lay before the public the facts he has collected, and the obſervations made upon them. A fund of accurate obſervations, it is ſaid, will thus be formed; but is there not a vaſt fund of facts on this ſubject already accumulated? What ſhall we call the numerous collection of caſes, cures, obſervations, practical hints, and remarks, now upon record? Cancer is a diſeaſe which has been known and deſcribed many centuries paſt; its hiſtory and its ungovernable virulence appear the ſame now to us as they did to the older ſurgeons; we can trace its progreſs, and point out the inefficacy of the curative means employed, but ſomething more is now required; ſome analytical method muſt be applied, and ſome compariſon inſtituted, otherwiſe we are loſt amidſt the multitude of inſulated facts, and loſe all the advantages of legitimate induction. Science has been not inaptly compared to an inquiſitive traveller, whoſe baggage increaſes as he goes along, by his collecting every object which ſtrikes his attention in his route, till at length he finds himſelf obliged to examine his trunk, either to get rid of worthleſs ſpecimens, or to arrange them in better order, that they may be made to occupy leſs ſpace, be more eaſily carried, and be more readily brought out for uſe. Medicine, including under that title all the branches of the healing art, abounds with heavy luggage and ſuperfluous baggage; almoſt every traveller in this road ſeems to have thought himſelf duly qualified to become a collector, and thus many a ſpecimen has been picked up, without its value or its nature being known, and the characters which are given are ſometimes ſo amorphous, that it is no eaſy taſk to detect its proper place in a well-arranged cabinet, even if the deſcription be not ſo adorned as to ſet all ſcientific ſyſtematics at defiance. Nowhere is this rummaging ſpirit of philoſophy more required than in what has been written upon cancer and carcinomatous tumours. A vaſt body of evidence is ſcattered about, and many valuable hiſtories remain to be collected and put in order; much that is both foreign and uſeleſs might be removed, and ſimplicity and ſcientific preciſion might be made to ſuperſede quackery and confuſion. This remark is intended to be general, and by no means more applicable to the preſent work than to others of a ſimilar nature. If Mr Home had pointed out where his experience led him to agree, and where to differ, from authors of eſtabliſhed reputation on this ſubject, beſides giving his own obſervations, our knowledge would appear at leaſt to make ſome progreſs; the experience of paſt ages would be made ſubſervient to our own, and we ſhould not be talking about a new diſcovery when we ought to be inveſtigating the nature of an obſcure and confirmed truth. In this reſpect his book is defective; he animadverts, however, with great juſtice, upon the too frequent practice of regular ſurgeons abandoning what are deemed incurable diſeaſes to quacks and pretenders, who find means to conſole their credulous patients by promiſes, which are more grateful than frigid indifference or total neglect.

Theſe 'obſervations' are divided into eleven chapters, eight of which are filled with the hiſtories of caſes of cancer in different parts of the body. Some of theſe examples afford room for difference of opinion with regard to the inferences deduced from them by the ingenious author; ſome are highly inſtructive, and others might, perhaps, have been omitted altogether, without any diſparagement to the practical utility of the work. The following are the principal practical hints which may be collected from the detail of theſe caſes. Tumours in the breaſt will ſometimes become cancerous after remaining long indolent and ſtationary; external violence lays the foundation of a cancerous diſeaſe, and increaſes its progreſs when it has already begun; the diſeaſe varies in its appearance according to the part it attacks; the pain is ſometimes occaſioned by the preſſure of the tumour againſt a principal nerve; the external application of arſenic will ſometimes produce pains in the bowels, diarrhœa, and rigor; and the ſame ſymptoms are excited by applying corroſive ſublimate to a tumour; the progreſs of cancer is ſometimes accelerated by an operation; the ſymptoms and appearance of cancerous tumours are ſometimes owing to hydatids, though theſe are to be conſidered as accidental or ſuperadded to the more formidable diſeaſe; and, laſtly, patients labouring under cancer of the rectum have experienced the greateſt relief from a pill compoſed of one, two, or three grains of extract of opium, introduced upon the end of a bougie into the rectum, and allowed to remain there.

In the ninth chapter, the author proceeds to give ſome obſervations on the nature and progreſs of cancer; he explains his motives in a very candid manner:

> “ In ſtating theſe obſervations, I wiſh it to be underſtood, that I am communicating all the material information I have been able to collect upon this important ſubject; and not meaning that it ſhould all be conſidered as my own. Much, certainly, originated with Mr Hunter; perhaps the greateſt part; for I am conſcious that we are too apt to conſider thoſe opinions that have long been known to us, and have been often revolved in our minds, as the creatures of our own brain, although, in fact, they are only adoptions to which we have given ſome change of dreſs, and are led to believe, by doing ſo, we have made them entirely our own.
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> “ The general principles here ſtated, both with reſpect to the contamination of the diſeaſe, and the different effects of cauſtic applications, I certainly received from Mr Hunter. The idea of common indolent tumours becoming cancerous was not his, ſince a caſe of that kind, which occurred, of ſuch tumours being met with in the breaſt, ſeemed to be new to him, and the diſeaſed part was preſerved as a ſpecimen of that fact. So far, indeed, have I been from adopting ſuch an idea from any ſource whatever, that, within theſe three years, I gave it as my opinion that the caſe was not likely to happen, and continued to hold the ſame opinion, till the two caſes, mentioned in the beginning of this work, placed the ſubject of ſuch caſes of

cancer in a new point of view, and induced me to put together the materials which are here produced.

"As cancer is a term too indiſcriminately applied to many local diſeaſes, for which we have no remedy, though they differ very much among themſelves, it becomes neceſſary to ſtate what the complaints are which I include under this denomination.

"The preſent obſervations reſpecting cancer apply only to thoſe diſeaſed appearances which are capable of contaminating other parts, either by direct communication, or through the medium of the abſorbents; and when they approach the ſkin, produce in it ſmall tumours of their own nature, by a mode of contamination with which we are at preſent unacquainted.

"There is a diſeaſe by which parts of a glandular ſtructure are very frequently attacked, particularly the os tincæ, the alæ of the noſe, the lips, and the glans penis. This has been called cancer, but differs from the ſpecies of which we are now treating, in not contaminating the neighbouring parts with which it is in contact; and neither affecting the abſorbent glands, nor the ſkin, at a diſtance from it. It is, properly ſpeaking, an eating ſore, which is uniformly progreſſive; whereas, in cancer, after the ſore has made ſome progreſs, a ridge is formed upon the margin, and the ulceration no longer takes that direction. It alſo differs from cancer in admitting of a cure in many inſtances, and under different modes of treatment.

"From the facts that have been ſtated in the preceding caſes, it appears that cancer is a diſeaſe which is local in its origin. In this reſpect, the caſes here given only confirm an opinion very generally received among medical practitioners, but in favour of which no ſeries of facts had been laid before the public, of ſufficient force entirely to eſtabliſh the poſition.

"This point I ſhall therefore aſſume as aſcertained, and, proceeding one ſtep further, ſhall endeavour to eſtabliſh a ſecond point, which is, that cancer is not a diſeaſe which immediately takes place in a healthy part of the body, but one for the production of which it is neceſſary that the part ſhould have undergone ſome previous change, connected with diſeaſe.

"In proof of this, I need only adduce the two firſt caſes in the preſent volume, as they appear to me the moſt clearly made out of any that I have ſeen; and having ſuch grounds to ſet out with, this opinion becomes very materially ſtrengthened by the innumerable inſtances which occur in practice, of a pimple, ſmall tumour, or wart upon the noſe, cheek, or prepuce, remaining for ten, fifteen, twenty, or thirty years, without producing the ſmalleſt inconvenience; but, at the age of 60 or 70, upon being cut in ſhaving, bruiſed by any accidental violence, or otherwiſe injured, taking a cancerous diſpoſition.

"All the caſes of induration of the gland of the breaſt, or of indolent tumours in it, which have continued for years, without producing any ſymptoms, and, after being irritated by accidental violence,

have

have aſſumed a new diſpoſition, and become cancerous, admit of the ſame explanation, and may be conſidered as ſo many proofs of the truth of this latter poſition."

The two concluſions, here ſo diſtinctly and decidedly ſtated, are of great importance, viz. 1. That cancer is local in its origin; and, 2. That ſome alteration takes place in the ſtructure of a part preceding that morbid affection ſtrictly called *cancer*. Theſe are two points of the greateſt moment, and, if well founded, muſt have conſiderable influence on the line of conduct to be followed in the treatment. They are points, however, which muſt not be aſſumed, unleſs after a very full induction of facts. The caſes adduced by Mr Home, and the reaſoning he employs, are highly intereſting, and well deſerving the moſt ſerious attention; but a greater number of inſtances are required, a more enlarged experience is neceſſary, to ſet theſe queſtions, which have been ſo long agitated, at reſt for ever. It is admitted, that ſome previous change muſt take place in the part before cancer attacks it, that the part muſt become diſeaſed in a leſs degree: now this pre-diſpoſition may be either general or local. When a ſcrofulous tumour occurs in any part of the body, we blame the whole conſtitution; when a chancre is produced, the ſyſtem is only ſecondarily affected by it. The whole ſyſtem is deranged in ſome caſes of cancer; is this affection primary or ſecondary? Cancerous diſeaſes are of a peculiar character; their ſymptoms and their termination are extraordinary, and peculiar to themſelves; they occur moſt frequently in elderly ſubjects, in women, eſpecially about the period of the ceſſation of the menſes, in which the conſtitution generally undergoes remarkable and important changes. If it be proved that ſome cancerous diſeaſes are local in their origin, it will not neceſſarily follow that all muſt be ſo. The chimney-ſweeper's cancer, in all probability, is local, the melancholy conſequences of his dirty occupation. We regret much that Mr Home has made no alluſion to this ſingular ſpecies of the malady, which has ſo deſervedly engaged his inquiries.

The two remaining chapters contain many valuable remarks on the advantages and diſadvantages attending the different modes employed for extirpating cancer, and on the particular mode of operating with the knife. Extirpation by the knife is ſtrongly adviſed in preference to the uſe of cauſtic; this latter mode is condemned, and the bad effects of it are well pointed out and corroborated by its conſequences, exemplified in the treatment of chancres. The cauſtic application employed by Mr Home conſiſts of equal parts of the white arſenic and ſulphur: This is very powerful, and anſwers the purpoſe of deſtroying any tumour which has not acquired the diſpoſition to throw out fungus. The actual cautery is recommended as the leaſt painful and moſt effectual mode of reſtraining the growth of fungous excreſcence; one inſtance is mentioned in which it was uſed with advantage. For many other uſeful obſervations we muſt refer to the book itſelf, which, although it contains little with which experienced practitioners are not already acquainted, either from obſervation or reading, deſerves to be peruſed and examined by every one anxious to ſettle his doubts with regard to ſome important parts of the treatment of this diſeaſe. Mr Home has done what we earneſtly hope others will do; but, at the ſame time, we muſt expreſs a wiſh that all writers on this difficult ſubject would compare the reſult of their own experience with that of others; time will thus be ſaved, and error avoided. Since we began to turn our thoughts again to this ſubject, in conſequence of reading this book, we have been fortunate in meeting with ſome remarks attached to a ſeries of excellent queſtions concerning the nature and the cure of cancer. Our taſk of reviewing has been conſiderably abridged by the judicious and comprehenſive manner in which theſe queſtions are expreſſed and explained. To many of our readers they may be ſtill, as they were till lately to us, unknown. We cannot, therefore, perform our office better, than by giving them an early place in our Journal; while, at the ſame time, we expreſs our obligations to Mr Home for his able reply to ſome of the queries which will be found in the Addreſs from the Medical Committee of a laudable Inſtitution.

V.

The Works of Dr John Brown; *to which is prefixed a Biographical Account of the Author.* By William Cullen Brown, M. D. late one of the Preſidents of the Royal Medical Society of Edinburgh. 3 vols. 8vo. London. 1804.

Five-and-twenty years have now elapſed ſince the publication of the firſt edition of the Elementa Medicinæ, a work intended by the author to exhibit the outlines of a ſyſtem for ſome years taught at Edinburgh, and which, it was fondly imagined, was to effectuate a complete revolution in the principles as well as in the practice of medicine.

The flame which this ſyſtem kindled, the paſſionate oppoſition it had to encounter, the feuds to which it gave riſe, are now only remembered. Like the author, theſe exiſt no more. Though his memory will live for ever, theſe we would wiſh to forget. The firſt effervеſcence occaſioned by the novelty of the Brunonian doctrine has ſubſided, at leaſt in this country; our ſchool is no longer agitated by the Cullenian and Brunonian factions; a more cool and diſpaſſionate ſpirit of inquiry has taken place of that keen contention which ſome of our readers may remember; the moſt perfect freedom reigns amongſt us, and the merits of adverſe ſyſtems are now canvaſſed, not by hoſtile bands rallied under the banners of party, but by a congreſs of electics, aware of the imperfection of medical ſcience, arduous, however, in the purſuit of truth; but who, conſcious of the difficulties they have to encounter, of the complexneſs and intricacy of the ſubject, of their inadequate means, confeſs that the laws of vitality, imperfectly underſtood, do not yet admit of any general claſſification; that no ſyſtem, no doctrine, has yet embraced the whole, and that the firſt ſtep towards improvement is the detection of error and fallacy, wherever found.

In this temper, to which we have been long habituated, we took up the preſent edition of the works of Dr John Brown, confident, too, that we ſhould not have to encounter an adverſe diſpoſition on the part of the editor. We were diſappointed, therefore, when we found our judgment dogmatically ſilenced, at the very threſhold, by the noiſy echo of the perfectibility of the ſyſtem. We excuſe the natural fondneſs of a parent for his own offspring, of the founder of a ſect for his own doctrine; but we do not feel the ſame indulgence for an obſtinate and overbearing diſciple. When a ſon becomes the biographer of his father, we acknowledge the difficulty and delicacy of the taſk, and are diſpoſed to pardon much; we expect a higher colouring of ſome, and a ſoftening down of other parts of the portrait, but, provided the reſemblance is not altogether loſt, we eaſily forgive a partiality ſo natural and ſo amiable.

Such is the life of Dr Brown, prefixed to the preſent edition of his works. But we ſhould extend too far our forbearance, were we to paſs, altogether unnoticed, the terms of arrogant exaggeration in which the editor ſpeaks of the Brunonian ſyſtem; for, on this ſubject, every one ſhould be allowed to judge for himſelf. Even thoſe who implicitly adopt all the tenets of the new doctrine will recollect, perhaps, that "good wine needs no buſh;" and thoſe who have found reaſon to queſtion its principles will be ſurpriſed, or offended perhaps, when told that every propoſition of the doctrine is ſupported by reaſoning ſo forcible and concluſive, that, while it bids defiance to refutation,

tion, it ſcarcely requires the aid of illuſtration. But let theſe ſee to themſelves; if they wiſh to be conſidered men of talent, candour, and learning, they muſt turn Brunonians. For ſuch are the compliments beſtowed on the patrons of the ſyſtem by our editor; while all thoſe who held out againſt the new light are as liberally cenſured for their ignorance, illiberality, and petulance. But the number of the ignorant, of the illiberal, and petulant, is gradually, it would ſeem, diminiſhing; for, if we are to give credit to the editor, the triumph of his father's doctrine has been at length complete. In ſpite of the moſt illiberal and perſevering oppoſition, in ſpite of faction, perſecution, and inquiſitorial authority, it has, we are told, found its way into every part of the world where literature and ſcience prevail. Every where, but eſpecially on the continent, it has gained numerous proſelytes and warm friends.

Thus ſucceſsful under the moſt diſadvantageous circumſtances, "What," it is aſked, "would have been the conſequence, had its diſcoverer, inſtead of being a poor, unfriended, and perſecuted philoſopher, with his ſplendid abilities united the adventitious circumſtance of being placed in one of the profeſſorial chairs of the flouriſhing univerſity of Edinburgh?"

> "Inſtead of being left, ſolely recommended by its own merit, to ſtem the torrent of oppoſition, and ſlowly puſh itſelf forward through the hoſts of enemies leagued againſt it, the Brunonian ſyſtem, countenanced by the great, would have been at once firmly eſtabliſhed in the medical ſchool of Edinburgh. It would have been received there by the ſtudents with implicit faith; and from thence have been rapidly diffuſed wherever the Engliſh language prevails. The continent would have next caught the flame, and the new light would have ſpeedily illumined the different countries of Europe, and occaſioned in them a revolution in medicine as extenſive as radical. Inſtead of the inventor being allowed, during his life, to languiſh in penury, honours and dignities would have been heaped upon him; and, after his death, ſtatues would have been erected to him, in grateful remembrance of the ineſtimable benefits he had rendered humanity.
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> "But though juſtice has not been done to his merits in his native country, abroad, where the reception of his doctrine did not in an equal degree affect the intereſts and pride of individuals, his ſyſtem has experienced a very different fate. The trite though very juſt maxim, "that a prophet is not honoured in his own country," has been fully verified by the perſecution he ſuſtained."

Οὐκ ἔστιν τὸ Λήθης ὕδωρ; Are we indeed ſuch ſtuff as dreams are made of, and is our little life rounded with a ſleep?

We cannot otherwiſe forget, that to this very oppoſition, to

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theſe ſame adverſe circumſtances, the Brunonian doctrine owed much of its early celebrity at home, and rapid progreſs abroad.

We remember the crowds of Brunonians who walked our ſchools, and thundered in our ſocieties, in times when mutual intolerence characterized the adverſe ſects; but, now that a more liberal ſpirit prevails, that oppoſition is heard no more, that the name and authority of Brown is quoted by the pupil without fear, and drops with reſpect even from our profeſſorial chairs, we hardly meet with a true and ſtaunch Brunonian, one who defends the whole theory and practice of his maſter, or who thinks that nothing can be retrenched, nothing added to his doctrine. The few, indeed, who chooſe to ſtyle themſelves Brunonians are ſo after their own way; for, let us not be deceived, thoſe are not all Brunonians who adopt the phraſeology of the ſyſtem. Scarcely do we meet with two who agree in their creed; not one, not even the editor of the volumes now before us, who ſubmits implicitly to the authority of the oracle. If any one ſhould doubt the truth of this aſſertion, let him conſult the note at the bottom of page 186 of the introduction.

Brown had made no proviſion in his ſyſtem for the recovery of exhauſted excitability, which, indeed, would have been perfectly inconſiſtent with the fundamental principle of his doctrine, that a determined portion of excitability is aſſigned to every individual at the commencement of its exiſtence. But our editor and the later Brunonians have taken warning, and have made proviſion for the daily repair of excitability, for the repair of that of which a determined portion only is, at the commencement of exiſtence, aſſigned every individual, and which is continually conſuming by the operation of ſtimuli. It is doubtful whether this improvement could be acknowledged by Brown; it is certainly nowhere to be diſcovered in his writings: But to this point we ſhall return hereafter.

The progreſs and ſucceſs of the new doctrine has been everywhere the ſame. The novelty of the ſyſtem, and its apparent ſimplicity, gained friends, whoſe zeal and ardour were increaſed by the intemperance of oppoſition. But abroad, as at home, the new light was gradually extinguiſhed. This we know to have been the caſe in France and Italy, and we even doubt that, in Germany, Brunonians are ſtill to be found, ſuch as Brown himſelf, were he alive, might acknowledge. But, in general, though the enthuſiaſtic admiration which the Elementa Medicinæ kindled in certain minds, in every country, on their firſt promulgation, has greatly cooled, the new doctrine, as it has been emphatically called, has, it muſt be confeſſed, everywhere left traces of its firſt impreſſion. It may be ſaid to have given the death-blow to the humoral pathology, to have excited a chaſter ſpirit of pathological inquiry, and to have introduced a new and more correct language into medicine. It has been the misfortune of this important ſcience ſeldom to have been cultivated in a chaſte and philoſophical manner. Vain ſpeculations and fanciful hypotheſes have obſtructed all more rational inquiry; or the other ſciences have each in turn been prepoſterouſly preſſed into the ſervice, with what ſucceſs need not be told to thoſe acquainted with the metaphyſical, mechanical, and chemical theories of the laſt and preceding centuries. We ſeem now, indeed, more prudently diſpoſed to regard the powers of muſcular motion and of ſenſation as ultimate facts in phyſiology, and to confine ourſelves, by obſervation and experiment, to the inveſtigation of their laws, and conditions of action.

The firſt attempt to generalize theſe laws we owe to Brown: He ſaw the error of preceding phyſiologiſts, yet he himſelf knew not where to ſtop: inſtead of ſteadily groping his way, and advancing by ſlow and ſure ſteps in the path he had diſcovered, he deviated as uſual, and, miſled by the common infatuation of ſyſtem-makers, the vain hope of explaining every thing by a haſty and premature generalization of the firſt abſtraction, he miſtook, or wiſhed others to miſtake, the combinations of a creative imagination for the inductions of extenſive and faithful obſervation. Theſe, indeed, he rejected with ſupercilious contempt; and the experience of ages was ſacrificed to the hypothetical dogmas of the new practice.

As few of our readers are unacquainted with the outlines of the Brunonian ſyſtem, it would be ſuperfluous here to offer any abſtract or analyſis of theſe volumes. A very few remarks, however, we ſhall take the liberty of making on the leading principles of this celebrated doctrine; on thoſe, eſpecially, to which the editor himſelf has directed our attention.

The firſt ſubject of animadverſion, which naturally preſents itſelf, is the fundamental propoſition and ground-work of the whole ſyſtem,—that a determinate portion of excitability is aſſigned to each individual at the commencement of exiſtence. That this determinate portion ſhould be acted upon by ſtimuli, gradually waſted by their regular operation, or ſuddenly exhauſted by the inordinate action of the more energetic, is intelligible enough, and perfectly congruous to the theory; but that this excitability, whoſe quantum is originally ſo exactly proportioned and ſo nicely determined for each individual, ſhould, after being conſumed, ever again accumulate by any interruption in the application of thoſe ſtimuli, is neither clear, intelligible, nor conſiſtent. Upon the principle, indeed, thus gratuitouſly aſſumed, the excitability might be economized, but never could be increaſed,

creaſed, never made to accumulate above what remained at the time any proportion of ſtimulus was withdrawn: though ſomething might be ſaved, nothing could be gained by the abſtraction of ſtimuli; and on the reapplication of the diſcontinued ſtimuli, or of others, the excitability ſhould never be found increaſed or accumulated, but ſhould be ſtationary at the point of interruption, or, more correctly, in every poſſible caſe ſhould be found ſomewhat waſted, though leſs than it otherwiſe might have been, inaſmuch as it muſt in the interval have been acted upon, and conſequently conſumed more or leſs by the other continued ſtimuli, in proportion to their number and power. On the other hand, every additional, unuſual, and violent ſtimulation ſhould, upon the ſame principle, rapidly waſte and haſten the irrecoverable exhauſtion of the powers of life. The propoſition, then, that a determinate portion of excitability is aſſigned to every individual, being equally inconſiſtent with the ſubſequent theorems of the ſyſtem, and with matter of fact, muſt be given up, or explained away ſomehow. This the latter, or Pſeudo-Brunonians, have attempted; or they have yielded the point ſo far as to admit that the waſted excitability may, by reſt and food, be partially renewed, "though it does not entirely regain the point where the exhauſtion had commenced." This conceſſion, however awkwardly and ſparingly made, is, in truth, an acknowledgement of overſight in that brilliant ſyſtem which challenges all reproof, and by no means a refutation of the critique of Hufeland, who had before pointed out the inconſiſtency of this principle. But, farther, according to the hypotheſis of Brown, even with the pittance of common ſenſe annexed to it, like an explanatory codicil by our editor and others, we do not perceive how a caſe of direct debility can ever recover. For if, with whatever dexterity we manage the whole range of ſtimuli, the ſavings of excitability can never be made to accumulate ſo as "to regain the point where the exhauſtion commenced," the ſyſtem, it is evident, muſt ſtill remain in a ſtate of exhauſted excitability, and indirect debility. To borrow an illuſtration from the Brunonians themſelves, let the caſe be that of an individual whoſe excitability is 10 degrees, and correſponding excitement, according to the fanciful arithmetic of the ſyſtem, 70 degrees, which is the middle point between extreme aſthenic, with indirect debility, and high ſthenic diſeaſe, and which, if any thing is intelligible in this curious ſcale, muſt be a point of health, being at an equal diſtance from ſthenic and aſthenic diſeaſe; and let this individual, ſo critically balanced, be farther ſtimulated by wine or opium, till 5° more of excitability are conſumed, he will then be in a ſtate of extreme aſthenia and indirect debility; from which, if we are to believe Dr William Cullen Brown, he never can be recovered. We may reduce the ſtimuli as we pleaſe, all at once or gradually, or change them in every poſſible way, the excitability never will accumulate "to the point where the exhauſtion commenced;" or, in the preſent caſe, it never will arrive at 10 degrees, the point in queſtion; nor can the patient be delivered from the indirect debility into which he has fallen, nor from diſeaſes of extreme aſthenia, with ſome one of the formidable catalogue of which he muſt for ever after be afflicted, while one ſpark of excitability remains. Take now a more practical caſe, which we are every day accuſtomed to ſee. Let this be an ordinary drunken paroxyſm, where the exhauſtion is often carried to a very great length, ſo as nearly to approach the zero of the Brunonian biometer, and obſerve how complete the recovery, how ſoon the individual is again upon his legs, reſtored to all his powers and wonted health, how ſpeedily and entirely the excitability is renewed; and you will acknowledge that his exiſtence has not depended on any limited allotment of excitability aſſigned to him at the firſt moment of life, which otherwiſe muſt have been completely and irrecoverably exhauſted by the very firſt error of this kind. Conſider, again, the long and vigorous life of many addicted to exceſſive ſtimulation, and you will agree that excitability, while the organization remains, may be recruited to almoſt any extent. Indeed, never, in our apprehenſion, was any thing more inconceivable than the moſt familiar example of indirect debility on the Brunonian hypotheſis. "Inconceivable," ſays our editor, "inconceivable indeed it is, that in indirect debility, whether great or not, the excitability may be reſtored by ſtill ſtronger ſtimuli; but who ever, before Dr Hufeland, alleged that ſuch an inconſiſtent principle formed any part of the Brunonian doctrine?" What follows, however, in the ſame note, and what forms part of the doctrine, is hardly leſs objectionable and inconceivable: "Now, it is a law of the excitability, that when it is worn out to a certain extent, ſtronger ſtimuli than ordinary are neceſſary to produce the uſual excitement. It is not proper, therefore, to have recourſe to ſtronger ſtimuli than what occaſioned the indirect debility; but the rule is, to employ a force of ſtimulus not much ſhort of that which produced the high excitement." But whether the ſtimuli employed be ſtronger or weaker, of the ſame or of a different kind, ſhort or not much ſhort of thoſe which induced the exhauſtion, is of little conſequence to the argument. The objection applies equally in every caſe. The excitability, by hypotheſis, is exhauſted to the degree of indirect debility, and never, according to the principles of the Brunonian, can be completely replaced; nor do we ſee how, conſiſtently with thoſe, it can be replaced at all. Stimuli, not much ſhort of thoſe which waſted the excitability, muſt be applied, and, however numerically managed, they muſt ſtill act upon what remains, wear it out more and more, and at length completely exhauſt the power. To this it is anſwered, "That the impreſſion made by every ſtimulus is leſs the ſecond than the firſt time, ſtill leſs the third than the ſecond time, and ſo forth, until it ceaſes to produce any farther excitement." The objection is ſurely neither obviated nor anſwered by this ſtatement. When no further excitement can be produced by a certain force of ſtimulus, do you expect excitement from a leſs? If not, you do, by changing the ſtimulus. But, more properly, your intention is, in every ſuch caſe, gradually to lower the excitement where it can ſtill be produced; and, for this purpoſe, you continue to apply ſtimuli not much ſhort of the original. Whatever ſtimuli are ſtill employed act upon the excitability, acting upon the excitability, they muſt produce excitement; producing excitement, muſt they not wear out the excitability by conſuming a part of what remained? And when, after one ſet of ſtimuli has ceaſed to produce the deſired excitement, you have recourſe to others, what do you expect from their action? By your own principles, if you are a ſound Brunonian, excitement, ſtill excitement, and farther waſte of excitability. Nor is the argument altered in the caſe of a deſcending ſcale of ſtimulation. Either theſe remaining ſtimuli alſo act on the excitability, or they do not. If they do not, they are uſeleſs. If they do, then they muſt ſtill conſume it; and the exhauſtion advances, though leſs rapidly than if the original and more powerful ſtimuli had been continued.

We repeat it, on the principles of Brown, if cloſely followed up, there is no poſſibility of an accumulation of excitability. It may be ſaved, but never can be increaſed beyond the point of its laſt exhauſtion. It cannot be alleged that the excitability, though acted upon and ſtill conſumed by a reduction of ſtimulus, accumulates faſter than it is waſted. For, according to the theory, every acceſſionof ſtimulus, from the very zero of the ſcale upwards to the degree, whatever that may be, at which you ſtop, or at which diſeaſe has commenced, has conſtantly and invariably exhauſted more excitability than was ſupplied: To whatever degree, therefore, you return in deſcending, if the excitability be at all acted upon, the exhauſtion muſt ſtill exceed the ſupply.

We have reaſoned all along according to the Brunonian hypotheses, that a determinate portion of excitability is aſſigned to every adividual at the commencement of its living ſtate; that it never is reproduced ſo quickly as it is exhauſted by the operation of ſtimuli, or that it never can be made to accumulate ſo as to regain the point where the exhauſtion commenced; and we have found that all theſe hypothetical propoſitions lead to concluſions at variance with obſervation, with truth, and, indeed, with the ſubſequent theorems of the ſyſtem itſelf.

If, then, our reaſonings have been juſt, if a foundation be laid in the organization of the ſyſtem for a conſtant ſupply of vital power to meet the expenditure within certain limits, and regulated by the nature and energies of the various exciting forces, the whole theory of the progreſſive and invariable exhauſtion of the excitability by theſe agents falls to the ground. We perceive not only that excitability may be renovated by the aſſimilation of ordinary food, but that the operation of other agents, not limited to its ſimple excitement and exhauſtion, may raiſe it, and increaſe the ſupply, ſo as to meet, and even to exceed, the waſte; while other agents there may be, having the force to arreſt the ſupply of excitability, or to diminiſh and deſtroy it by another operation than that of excitement and exhauſtion. And all this, ſo far from involving an abſurdity, ſeems more rational and conſiſtent than to maintain that the excitability can only be acted on in one way, or that it has been exhauſted by exceſſive ſtimulation, where no ſigns of excitement and action have been or can be ſhown.

This leads to the conſideration of another general propoſition of the Brunonian doctrine, That all the powers which act on the excitability are exciting or ſtimulant, differing one from another in degree only, but in their general operation perfectly alike. The agents thus ſweepingly brought together are heat, diet, the blood, ſecreted fluids, air, ſenſe, thought, paſſions, contagions, poiſons, the whole materia medica, every thing; all of which are ſaid to produce excitement, the expreſſion adopted to deſignate their common effects on the excitability, which are "ſenſe, motion, and mental action."

"Since," continues the author of this ſyſtem, "ſince, of the ſame exciting powers, ſome act by evident impulſes, and the identity of the effect of others infers the ſame mode of operation, and ſince they have all a certain activity in them, *they ought to be* denominated ſtimulant or ſtimuli."

If this reaſoning mean any thing, if it be at all intelligible, it may be applied with equal force to every caſe of cauſation whatever, and might as cogently ſerve to prove that the whole phenomena of the univerſe are the effects of ſtimulating powers, as that life is a forced ſtate, and all its phenomena the effects of unvaried ſtimulation. Thus all cauſes act by impulſes, or, in the opinion of moſt philoſophers of the preſent times, by preſſure; whatever varieties, therefore, we may obſerve in their effects, their mode of operation may be ſaid to be the ſame. Again, all cauſes "have a certain degree of activity in them," and ought therefore "to be denominated ſtimulant, or ſtimuli." And this is the whole force of that memorable argument which Brown ſo looſely employs on every occaſion, and in the general application of which we can perceive no other identity than is here ſtated.

It is very far from proving that the *only effect* of the acting powers is excitement, or even that this is the *common effect* of them all. "The common effect produced by the exciting powers is ſenſe, motion, mental action, and the paſſions; which effect being one and the ſame, it muſt therefore be granted, that the operation of *all the powers* is alſo one and the ſame."—"The effect of the exciting powers acting upon the excitability is excitement." But do all invariably and indiſcriminately produce excitement, ſenſe, motion, mental action, and the paſſions; or are there ſome which produce ſenſe rather than motion, others rather motion, or mental action, or paſſion? If the effects of all the powers be identical, if they indiſcriminately produce all theſe changes, without any other variety than that of degree, it would be eaſy ſo to doſe and proportion any one of them, as to produce the uſual and common effects of any, or of all the others. If not, we muſt at once acknowledge a marked difference and characteriſtic agency in the various powers. Beſides, it is allowed, almoſt univerſally, that ſome powers, inſtead of waſting the excitability in proportion to the excitement occaſioned, do rather raiſe its force, or accelerate its accumulation. This effect the later Brunonians have openly attributed to food; and it is ſo true alſo of other ſtimuli, that the juſt expreſſion of the fact has unguardedly eſcaped from Brown himſelf, though the ſentence which we are going to quote, for the ſake of the expreſſion, becomes, from the concluding member, complete nonſenſe *.

"The waſte of excitability firſt exhauſted by ſtimuli, and then *recruited* by new ones, is moſt difficultly repaired." Indeed, though inconſiſtent with that fundamental propoſition which we have already examined, it is perfectly true in fact, and admitted in the general ſtructure of the Brunonian doctrine, that the excitability may be recruited; for how otherwiſe, when once exhauſted, could it ever again accumulate?

Now, this renewal of the excitability muſt, we think, be admitted to depend on the changes produced in the ſyſtem by the operation of ſome exciting powers; for, if not, life would be no longer what Brown has choſen to call a forced ſtate, ſince the moſt material of all the functions would thus be independently maintained. Agents, however, there muſt be, by the operation of which the excitability is ſupported and renewed. Food has been acknowledged to have this effect; oxygen appears to have the ſame power; others there may be conſtantly operating; and even, perhaps, in the catalogue of the materia medica, ſimilar agents may be found. If, of the powers which act on the living ſyſtem, ſome conſtantly waſte the excitability by previous excitement, and ſome operate by recruiting it, a preſumption at leaſt ariſes, that there may be others which retard the renewal of excitability, or which weaken it, without previous excitement. Such powers would not be devoid of activity; they would be as real and efficient as thoſe producing the higheſt excitement and greateſt exhauſtion. There is no abſurdity in the ſuppoſition of ſuch powers, whatever may have been ſaid to the contrary; they are conceivable, and have long been marked by the term *ſedative*. Brown, it muſt be granted, has ſucceeded in ſhowing that ſome agents, formerly thought to be ſedatives, affected the ſyſtem primarily as other ſtimulants; but he has not been equally ſucceſsful in his attempt to prove that there does not exiſt any ſedative power in nature. The force of his general argument we have already examined. It remains to call the attention of our readers to an example or two of its particular application. We ſhall have abundant proof of the perplexed views and unſteady conception with which he laboured to eſtabliſh this favourite ſpeculation.

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* Brown himſelf acknowledges that he may write nonſenſe.—Vol. ii. note, p. 162.

It will ſcarcely be denied, that there are powers which deſtroy life and excitability without previous excitement, or at leaſt without any of its acknowledged ſigns being diſcoverable. An example, to which it will be difficult to make any objection, is afforded in the effects produced by the reſpiration of ſome of the noxious gaſes. The animal which inſpires pure hydrocarbonate is killed, not, however, from want of oxygen, not from ſuſpenſion of natural reſpiration, becauſe this function may be interrupted for a much longer time without occaſioning death; nor from exceſſive ſtimulation, becauſe the animal dies without any ſign whatever of previous excitement. Senſe, motion, and all the other faculties of life, are inſtantly deſtroyed; and the irritability of the muſcles of an animal ſo killed is found to be extremely low. If diluted hydrocarbonate be reſpired, the effects differ in degree only; the forces of life are depreſſed; ſenſe and motion are impaired; there is every mark of a diminiſhed but no ſign of an increaſed excitement. Such a power has no title to be called ſtimulant. It is, ſtrictly ſpeaking, ſedative. The effects of ſome other ſubſtances denominated poiſons would lead to the concluſion that they alſo are ſedative. They are immediately deſtructive of life, or they weaken action, without any preceding excitement. Yet theſe alſo Brown claſſes with the uſual exciting powers. Their operation, he obſerves, muſt be allowed to be the ſame, becauſe they operate the ſame effect as the ordinary exciting powers. This, however, he has not even attempted to prove. What are the effects of the ordinary exciting powers? Senſe, motion, and mental action, the phenomena of life. The effects of poiſons are the contrary of all theſe; diminiſhed excitement and death, without one preceding inſtance of increaſed action. The natural inference ſeems to be, that their mode of operation muſt be different from that of the ordinary exciting powers. Again, ſome paſſions of the mind are highly exciting, and others as evidently depreſſing. But as a direct ſedative had no place in the ſyſtem of Brown, the paſſions having this effect were ſacrificed. They have no real or poſitive exiſtence, we are told; they are conſidered as negations merely of the exciting paſſions; "fear and grief are only diminutions or lower degrees of confidence and joy." With equal propriety, however, it might be ſaid, that joy is the abſence of grief; or that confidence ariſes from the abſtraction of fear. And indeed the ceſſation of grief is more commonly and more immediately followed by joy, than that of joy by grief. Thus the depreſſing paſſions, by the ſame ſophiſm, might be maintained to be the only real ones, the exciting paſſions diminutions only of theſe. In truth, however, they are all affections of the mind, equally poſitive and independent. An exciting may ſucceed to a depreſſing paſſion, or the contrary, or either to a ſtate of indifference. As hatred is oppoſed to love, or averſion to deſire, ſo is grief to joy; but no one of theſe paſſions can be ſaid with truth to be a diminution of, or any power or degree of its counter affection. Deſire may ceaſe without paſſing into averſion, and the abſence of joy is very different from actual grief. No parallel, therefore, can be drawn between the effects of a depreſſing paſſion, and thoſe which reſult from the abſtraction of an exciting power.

With regard to contagions, when we conſider the regular and progreſſive ſeries of actions induced by theſe on the ſyſtem; when we have obſerved that each contagion gives riſe to a train of peculiar and characteriſtic phenomena, defining the diſeaſe whence the contagion itſelf originated, and terminating often in the formation and ſeparation of a quantity of morbid matter alone capable of propagating the ſame diſeaſe in others, we cannot acknowledge that identity in the operation of the exciting powers which the Brunonians contend for. In diſeaſes induced by contagions, in the ſmall-pox for example, or in lues venerea, we perceive ſomething more than ſimple excitement and unvaried ſtimulation. Individuals of every deſcription, whether prediſpoſed to ſthenia or aſthenia, whether labouring under direct or indirect debility, may be infected; and when the diſeaſe has taken place, it runs its courſe, under every poſſible modification of the excitability. So true is this of the ſmall-pox, that it may begin in direct, and terminate in indirect debility, without any interruption in the courſe of the diſeaſe. It is ſometimes a ſthenic, ſometimes an aſthenic diſeaſe, but ſtill the ſmall-pox, with the ſame progreſſive ſeries of changes, terminating in the ſecretion of matter capable of reproducing the ſame phenomena in others. Yet the ſame individual is once only in his life ſuſceptible of this diſeaſe; nay, the very ſlight and almoſt imperceptible excitement or indiſpoſition produced by the vaccine infection renders the ſyſtem for ever after incapable of diſeaſe from variolous contagion. What change has been induced on the excitability of an individual who has had the ſmall-pox, or vaccina, which ſhould prevent a repetition of this formidable diſeaſe? The excitability of one who, when an infant, had been vaccinated, ſeems no way to have been affected. During the courſe of a long life, it may have undergone every poſſible revolution, accumulated and exhauſted by turns, obedient to every ſtimulus; the individual may have enjoyed a life of uninterrupted health, with the moſt perfect uſe of every function, or he may have ſuffered a great variety of diſeaſes; but the virulent contagion of ſmall-pox, in reſpect to his ſyſtem, is perfectly innocuous. No exhauſtion of excitability, no affection or power of it, as limited by the Brunonian theory, can afford any explanation of this, or indeed of any train of morbid phenomena produced by contagion. By regulating the excitement we may, indeed, prevent the fatal termination of theſe diſeaſes; we may moderate ſymptoms, and keep action within due bounds, or we may ſupport the languid forces of the ſyſtem; but we cannot cure ſuch a diſeaſe as the ſmall-pox; the train of morbid changes continues without interruption. Againſt another diſeaſe, originating in contagion, we are better armed. The ſymptoms of ſyphilis are arreſted by mercury, and the diſeaſe itſelf is cured; but no permanent change can be effected by any management of the excitability by means of ſtimuli. The ſame is true of other diſeaſes that do not ariſe from contagion. In ſcurvy, wine, opium, cinchona, camphor, ammonia, mercury, are of no avail, however doſed; the excitability may be acted upon by theſe, and varied at pleaſure, without any good effect; a few ounces of lemon juice operate like a charm. Some other power, therefore, there muſt be in thoſe agents, beſides that of producing excitement, or of ſtimulating and exhauſting the excitability. Contagions muſt differ from one another, and from other exciting powers, in ſomething more than degree of activity. In oppoſition to this concluſion, let us now ſtate the reaſoning of Brown.

"Some contagions accompany diſeaſes depending on too much ſtimulus; others, thoſe which conſiſt in debility. If both theſe are the product not of contagion alone, but by a conjoint operation alſo of the hurtful powers, which uſually depend upon ſtimulus (which is a fact aſcertained), the effect, therefore, in this caſe being the ſame, the concluſion is unavoidable, that their cauſe is alſo the ſame, and the mode of operation of both the ſame. It muſt therefore be admitted, that the operation of contagions is ſtimulant. It makes for the ſame concluſion, that no remedies, but thoſe which cure diſeaſes depending upon the operation of the uſual hurtful powers, remove thoſe which have been ſuppoſed to be induced by contagions. Finally, the great *debilitating energy* obſervable in *certain contagions* does no more prove a diverſity of action in them, than it does in the caſe of an equal or greater degree of debility ariſing from cold."

Some contagions accompany diſeaſes depending on too much ſtimulus, as the ſmall-pox and meaſles. Others, thoſe which conſiſt in debility, as petechial, typhous fever, the plague.

From this ſtatement, by what proceſs of reaſoning can we infer an identity of cauſe, or ſimilar operation? The natural and unavoidable concluſion ſeems rather to be, that the one claſs of contagions is exciting, the other ſedative. Nay, the proof of a ſedative operation is the more complete of the two. "The great *debilitating energy* obſervable in certain contagions," recogniſed by Brown, and moſt unluckily compared by him with the debility ariſing from cold, is an argument for their ſedative power, or it proves, at leaſt, that the debility ariſing from theſe contagions, and from cold, is the conſequence of direct defective excitement. For the debility ariſing from exciting powers is indirect, being the conſequence of previous excitement, and waſte of excitability, while that ariſing from cold is direct, from deficient ſtimulation, and want of excitement.

Our concluſion then would be, "That the great debilitating energy obſervable in certain contagions," as in the caſe of an equal or greater degree of debility ariſing from cold, which directly lowers the excitement of the ſyſtem, proves that their operation is different from that of the uſual exciting powers. " If," he continues, " both theſe are the product, not of contagion alone, but by a conjoint operation alſo of the hurtful powers, which uſually depend upon ſtimulus, *which is a fact aſcertained;* the effect, therefore, in this caſe being the ſame, the concluſion is unavoidable, that the cauſe is alſo the ſame, and the mode of operation of both the ſame." The force of this argument we do not profeſs altogether to comprehend. Are not diſeaſes ariſing from contagions the product of thoſe contagions? Can they be produced or imitated by any other power, or any other ſet of powers? How ſhall we produce ſmall-pox, but by the contagion of that diſeaſe? What other powers conſpire with the contagion? Doubtleſs there muſt be blood, and food, and heat, and air, and many other powers acting on the ſyſtem, without whoſe conjoint operation the diſeaſe could never be produced. But the uſual effects of theſe powers are not any ſpecific diſeaſe, but life and health. What are the other hurtful powers which uſually depend upon ſtimulus, whoſe conjoint operation with contagion is neceſſary to produce the diſeaſe? We know of none. When we were in the practice of inoculating for the ſmall-pox, we never applied any of thoſe hurtful powers; we allowed our patients to remain as much as poſſible in the moſt natural ſituations, where they might enjoy ſalubrious air and innocent diet; we carefully avoided any exceſſive ſtimulus, and balanced the excitement with Brunonian ſcrupuloſity; yet we ſeldom were diſappointed in producing the diſeaſe in the moſt regular form. We have ſeen the diſeaſe take place, and run its courſe under every poſſible degree of excitement; we have ſeen half-ſtarved children affected with it, as well as the moſt robuſt and plethoric; we have known ſome killed by cold and ſtarvation, and ſome ſtimulated to death by heat, wine, and ardent ſpirits; and ſtill the contagion operated while life remained.

The venereal diſeaſe, in like manner, is the immediate product of the ſyphilitic virus, can in no other way be produced, and needs not the conjoint operation of any other hurtful powers. It is not therefore a fact aſcertained, that theſe diſeaſes are not the product of contagion alone.

It is true, indeed, that ſome circumſtances conſpire to render individuals more ſuſceptible of diſeaſe from the contagion of petechial, typhous fever, and the plague. The depreſſing paſſions, inanition, depletion, confined and foul air, and cold, have been enumerated as prediſpoſing the ſyſtem to the action of contagions, or, in other words, as conſpiring with contagion in producing the diſeaſe; and, in this ſenſe, the diſeaſe may be ſaid to be the conjoint product of theſe hurtful powers and contagion. But theſe hurtful powers do not depend upon ſtimulus, as is alleged in the paragraph we have quoted, but upon the want of it. They are all, as we learn from the volumes before us, examples of the diminution of ſtimulus, of its reduction below the degree neceſſary to ſupport excitement, leading neceſſarily to direct debility, which conſiſts in a low excitement, and accumulated excitability. If, then, contagions conſpire with theſe defective powers, and, by their *great debilitating energy*, produce diſeaſes of extreme aſthenia, it can never be maintained, on this ground, that the mode of operation of thoſe contagions, which accompany and give birth to diſeaſes which conſiſt in debility, is the ſame with that of the uſual exciting powers. So far from proving that the operation of all contagions is ſtimulant, the facts afford the ſtrongeſt preſumption for believing that theſe at leaſt act as ſedatives, and directly lower the excitement. But, independently of this, the more general obſervation that each contagion invariably produces its own diſeaſe, which is not one ſimple affection of excitement, ſuch as direct or indirect debility, but a ſeries of complicated phenomena, of morbid changes, of deranged organization, and impeded functions, peculiar to each diſeaſe, and which, as in ſmall-pox, proceed though the excitability vary, and the excitement be changed, proves that ſomething more is implied in the operation of contagions than mere ſtimulation, and that each has its own peculiar and ſpecific mode of affecting the ſyſtem. Nor are remedies leſs various in their operation, of which it is impoſſible to render any account on the Brunonian theory of ſimple ſtimulation. How is the venereal diſeaſe cured by mercury, intermittent fever by cinchona or arſenic, ſcurvy by lemon juice? Not certainly by the mere excitement which they occaſion; for this might be imitated by a thouſand other agents, which, however, have no effect in curing theſe diſeaſes. But our limits forbid us entering more fully upon this diſcuſſion, and what has already been ſtated ſeems ſufficient for our preſent purpoſe. It muſt appear to the candid philoſopher, that the various powers which act upon the living ſyſtem refuſe unlimited ſubmiſſion to the Brunonian hypotheſis.

The general effect of ſtimuli is to produce excitement; but this is not the effect of all the powers, nor the only effect of thoſe which are ſtimulant. Some powers exhauſt the excitability by their ſtimulus, others appear to raiſe and to recruit it, and others, again, to weaken or deſtroy it, without previous excitement and conſequent exhauſtion. But, beſides theſe general differences, there are various other peculiarities in their modes of operation. They differ in the ſucceſſion of phenomena to which they give occaſion; the intoxication produced by wine, opium, and ſome other narcotics, cannot be imitated by aromatics, by the preparations of antimony, or of mercury; nor the effects of theſe by narcotics: They differ in their power of ſpecially affecting particular organs and functions, as the ſtomach, inteſtines, kidneys, ſkin, ſalivary glands, abſorbent or vaſcular ſyſtem, by emetics, purgatives, diuretics, ſudorifics, mercury, digitalis, &c.: they differ in their power of inducing and of oppoſing particular organic changes, and morbid affections of the ſyſtem, as each contagion produces its own diſeaſe, and no other, as ſyphilis and biliary diſeaſes are cured by mercurials; ſcurvy by vegetable acids, and uric diſeaſes by alkalis: They differ in the durability of effect, or change produced, as is obvious by comparing the momentary and fleeting effects of the diffuſible ſtimuli with the permanent excitement and vigour produced by tonics, as by cinchona and preparations of iron, by wholeſome food and pure air.

With theſe ſtrictures, we conclude our obſervations on the ſpeculative dogmas of the Brunonian ſyſtem. The doctrine of excitement, the laws of excitability, and the theory of the operation of the exciting powers, as taught by Brown, have appeared inadequate to the explanation of the phenomena of life, of the actions of the natural and hurtful powers, and of the operation of remedies.

In its application to the practice of medicine, the Brunonian ſyſtem is marked by a total neglect of the connexions and depedences of the different functions, of the organic derangements which take place in diſeaſes, of the curative indications deduced from theſe, and of experience in the adminiſtration of remedies. As a general proof of this charge, we need only ſtate, that, according to Brown, there are but two forms of diſeaſe, two indications of cure, and two ſets of remedies. "The ſame debilitating remedies, which remove any one ſthenic diſeaſe, remove that whole form of diſeaſes; and the ſame ſtimulant means, which cure any one aſthenic diſeaſe, remove all the reſt." As particular examples, we might refer our readers to the Brunonian catalogue of aſthenic diſeaſes. To be brief, we ſhall ſelect apoplexy, ſome convulſive diſeaſes, thoſe eſpecially of young people, and ſcurvy. Theſe are all diſeaſes of aſthenia, and, in the new ſyſtem, treated by indiſcriminate ſtimulation. Yet the whole hiſtory of apoplexy, and our knowledge of the nature and cauſes of that diſeaſe, derived from obſervation of all the antecedents, and from thouſands of diſſections, have led to a very different practice, the utility of which is confirmed by the experience of the moſt accompliſhed phyſicians of every age and country.

We too have often witneſſed the happy effects of the method of depletion in attacks of apoplexy. Many lives have been preſerved by venæſection and large evacuations, in caſes where we firmly believe the Brunonian practice would have accelerated the fatal termination of the diſeaſe. Often, too, when vertigo, headach, tinnitus aurium, partial ſpaſms, or palſies, and other precurſors, have ſounded the alarm, the diſeaſe has been prevented by thoſe means which, as debilitating, ſhould, according to Brunonianiſm, have induced the attack. Amongſt many other unqueſtionable authorities on this point, Tiſſot, in his epiſtle to the celebrated Haller, may be quoted. His language is indeed very ſtrong; one would almoſt imagine he had the modern Brunonians in view. " Dum jacet immobilis æger, aſſeſſores et ſæpe medicus, peſſimo errore motum reſtituere conantes, indeſinenter ægrum *variis ſtimulis* laceſſunt; ſed quam damnoſe; non deficit enim motus cordis quem ſuſcitare ſolum poſſumus; at deficit poteſtas ſentiendi, et artus movendi, unice reſtituenda compreſſionem cerebri minuendo; quam minuere una eſt methodus, vitales nimirum motus et plethorem reſcindendo.

" Sedulo ergo cavendum ab omni concuſſione, volutatione, frictione; ab omni potu calefaciente, aromatico, ſpirituoſo; ab omni demum auxilio quod deprimendam vim circulationis augere poſſit. Sedulo prohibenda omnia remedia quæ ſtimulo aliquo fœdantur; omnia alimenta quæ aut acre habent, aut plenius nutriunt." Examples he then relates of the moſt fatal conſequences reſulting from neglect of theſe cautions, compared with others of the happy effect of the evacuant plan of treatment.

Many diſeaſes of children, amongſt others, caſes of convulſion, proceed from irritations often in the primæ viæ. Every practitioner converſant in thoſe diſeaſes knows the danger of employing the diffuſible ſtimuli recommended by the Brunonian theory, and how readily, on the contrary, theſe formidable ſymptoms frequently yield to evacuants. One diſeaſe has been noticed in a former Number of this Journal, the chorea S. Viti, hitherto unſucceſsfully treated by ſtimulants and tonics, which has often been cured by the removal of irritations, by the extraction of a tooth, or by a courſe of purging.

But the climax of Brunonian prejudice and error may be ſhortly expoſed in his obſervations on the treatment of ſcurvy. This too Brown conſiders as a diſeaſe of general and uncomplicated aſthenia, to be cured by the ordinary ſtimuli, by wine, geſtation, and exerciſe, by freſh meat, with or without greens. " The pretence," he adds, " of its cure being effected by greens, roots, ſour crout, and ſimilar things, ſo much boaſted of lately, which, without the remedies juſt now mentioned, could not fail, by their *debilitating operation*, to aggravate the diſeaſe, is derived from a noted blunder among phyſicians, by which they are led to overlook the moſt certain, ſimple, and evident facts, and take up, in place of them, the greateſt falſehoods, or ſuch facts as have a very narrow foundation in truth."

Now, we will venture to aſſert, in oppoſition to this ſtatement, that the ſea ſcurvy, which is here ſpoken of, never was, and never can be, cured by Brunonian ſtimuli, by wine, by exerciſe, by freſh meat, even *without greens, roots, and ſimilar things;* that, on the contrary, it has been cured, and is daily cured, by theſe very things, without the aſſiſtance of freſh meat, of wine, or of other ſtimuli. The truth is, that ſcurvy is now cured on board our ſhips of war by vegetable food and vegetable acids, without any other auxiliary remedy, and even at ſea, when freſh meat cannot be procured. A ſcorbutic patient is now ſeldom or never ſent to an hoſpital on ſhore; he is cured on board by a plentiful allowance of vegetables, if in harbour, and by large doſes of lemon juice, without any other remedy or change of diet, if the ſhip is at ſea.

"We have often," ſays Dr Trotter, "heard people talk of land air and land recreations for the ſcurvy. There is not, at preſent, an officer in the fleet that, in doing juſtice to either his people or his country, would prefer the cure out of a ſhip."

The effect of good lemon juice, liberally adminiſtered in ſcurvy, comes indeed nearer the idea of a ſpecific than that of any other remedy we are acquainted with. We have known ſcorbutics cured by it, without any change of diet or other circumſtances, at ſea, in little more than a fortnight. We refer our readers for further proof to Dr Baird's letter, and other evidences, in the Medicina Nautica of Dr Trotter, to whoſe talents and exertions the naval ſervice of this country is greatly indebted. Such are the facts which Brown, to ſuit his ſyſtem, has ſtigmatized as the greateſt falſehoods. Such are the remedies of ſcurvy which experience has recommended, but which, according to the new ſyſtem, ſhould rather aggravate the diſeaſe by their debilitating operation.

Theſe are a few of the many examples which might be given of the dangerous errors of the Brunonian ſyſtem, of its contradictions, inconſiſtencies, and defects. But it is time to put an end to this review, already perhaps, in the opinion of ſome of our readers, too long. The doctrine of excitement, even if the laws of excitability were fully aſcertained, would ſtill be imperfect as a theory of life, which muſt alſo include the doctrines of the chemico-material proceſſes conſtantly operating in the ſyſtems of organized beings.

VI.

Bulletin de l'Ecole de Médecine de Paris, et de la Société établie dans ſon Sein. Première Année. No. I. 8vo. Paris. An. XIII.

THE duties of the profeſſors in the medical ſchool eſtabiſhed at Paris are not confined to the lectures delivered from its chairs. They are enjoined to watch over the public health, and to contribute, by every means in their power, to the advancement of the ſciences connected with medicine. They form a ſociety, to whoſe care the law has committed every inveſtigation relative to the topography of France; the collection and publication of the antient memoirs of the faculty, of the royal ſociety of medicine, and of the academy of ſurgery, and, in general, the advancement of medical ſcience. The ſociety is compoſed at preſent of ſixty members, viz. the twenty-ſeven profeſſors, the ſuperintendent of the anatomical preparations, ſixteen aſſociates, and ſixteen adjoints. It has alſo choſen ſixty national aſſociates reſiding in the different departments of France, as well as many foreign aſſociates, and an undetermined number of correſpondents.

Already, we are informed by this bulletin, their labours are conſiderably advanced. Several important papers have been read before the ſociety; amongſt many others are promiſed to the public, Laſſus on fungous tumours of the perioſteum; a memoir, by Dupuytren, on a new genus of medical conſtitutions, founded on the pathological changes obſerved in a given number of dead bodies, at different ages, in different ſeaſons of the year, &c.; a memoir on the veins of the bones, by the ſame; obſervations and a new claſſification of the hydatids of the human bodies, by Laennec; experiments on pus, by Schwilgué; a memoir, by Duvernoy, on the tongue of birds; on the different ſpecies of ipecacuanha, and on the fucus helminthocorton, by Decandolle. And as the ſociety is conſtantly occupied in arranging the manuſcript memoirs of the former academical ſocieties to which it has ſucceeded, we hope much from its future publications.

In this we are preſented with a very curious report made to the ſociety by M. Dupuytren, in the name of a commiſſion compoſed of Meſſ. Cuvier, Leroy, Baudelocque, and Jadelot, appointed

pointed to examine a phenomenon which, by its ſingularity, had excited, to a great degree, the curioſity of phyſiologiſts, and the attention even of the miniſter Chaptal; "a fœtus found in the belly of a young man of 14."

In ſuch caſes, which are ſo contrary to ordinary experience, it is the duty of the philoſopher, on the one hand, to admit no more than what is rigorouſly proved, and, on the other, not raſhly to circumſcribe the powers of nature. Such appears to have been the diſpoſition under which the following hiſtory and reflections were drawn out by the committee of the medical ſociety.

"Amidée Biſſieu, in whoſe body the fœtus was found, had complained, from the time he could make himſelf underſtood, of a pain in the left ſide, which was, at a very early period, enlarged into the form of a tumour. Theſe ſymptoms continued, without materially affecting the health of the child, till he had attained his 13th year, when he was ſuddenly attacked with fever. From that moment the tumour became very large and painful; and, after ſome days, his ſtools were obſerved to be fœtid and puriform. At the end of three months from this attack, he plainly laboured under a ſort of pulmonary conſumption. Shortly afterwards he paſſed by ſtool a ball of hairs, and at the end of ſix weeks more he died.

"The body being opened by Meſſ. Guérin and Bertin, there were found in a ſac attached to the arch of the colon, and communicating with it, ſome balls of hair, and an organized maſs, reſembling, in many points, a human fœtus. The connexion between the habitual indiſpoſition of Biſſieu and his diſeaſe is obvious, as well as that between the diſeaſe and the appearances by diſſection. This firſt point being aſcertained by authentic documents, it became of the higheſt importance to determine the poſition of the organized maſs, and the ſituation in which it had been formed. Now, the inſpection of the parts ſent to the ſociety by M. Blanche, ſurgeon at Rouen, clearly demonſtrates that it was contained in a cyſt ſituated in the tranſverſe meſocolon, near the inteſtinum colon, and without the canal of the primæ viæ. The cyſt, indeed, communicated with the inteſtine; but this communication was recent, and, in ſome meaſure accidental; and the remains of the ſeparation between the two cavities were ſtill evident.

"The true poſition of the organized maſs being determined, it was neceſſary to aſcertain its nature. We found, in its form, many points of reſemblance with the human fœtus, but we obſerved, at the ſame time, a great many particular diſpoſitions, ſome of which appeared to belong to vices of conformation, and others to derangements ſucceſſively produced by time, and by its retention in the meſocolon.

"There appeared a ſure method of determining the true character of this production. It is evident, that if it poſſeſſed a ſyſtem of organs independent of thoſe of the body to which it was attached, it ſhould be conſidered as an individual; on the contrary, if nothing could be diſcovered but a continuous organization, it ſhould be referred, whatever might be its external form, to the claſs of tumours which originate in every part of organized bodies, and be no longer regarded as a phenomenon. The diſſection of this maſs, performed with extraordinary care, diſcovered traces of ſome of the organs of ſenſe; a brain, a ſpinal marrow, and large nerves; muſcles degenerated into a kind of fibrous matter; a ſkeleton compoſed of a ſpine, a head, a pelvis, and the rudiments of the limbs; laſtly, an umbilical cord, very ſhort, and inſerted into the meſocolon without the inteſtinal cavity; an artery and a vein ramified at both extremities, that belonging to the fœtus, and that belonging to the individual in whom it was found. The exiſtence of the preceding organs certainly demonſtrates the individuality of this organized maſs, although it was otherwiſe deprived of the organs of digeſtion, reſpiration, of urine, and of generation: the abſence of a great many organs neceſſary to life ought only to make us regard it as one of thoſe monſtrous fœtuſes deſtined to periſh at the moment of their birth.

"The exiſtence of an organized maſs in the meſocolon being aſcertained, its analogy with the human fœtus being determined, it ſtill remained for us to inquire how long it had been there, how formed in the body of another individual, and how it had exiſted there?

"This fœtus being found without the alimentary canal, it cannot be allowed to have been introduced into the body of the young Biſſieu after birth; which deſtroys the greater number of hypotheſes which have been imagined to explain this phenomenon. The ſex of Biſſieu, perfectly aſcertained by Meſſ. Delzeuſe and Bronard, by order of the prefect of the Eure, precludes, beſides, all idea of fecundation; nor could he be ſelf-impregnated, ſince he was provided with male organs only, without the ſmalleſt trace of thoſe of the other ſex.

"The facts which form the baſis of this report lead naturally to very different notions; the indiſpoſition to which Biſſieu had been ſubject from childhood; the nature of the ſymptoms of this indiſpoſition; thoſe alſo of the diſeaſe which immediately ſucceeded it, and the appearances diſcovered on diſſection, are ſo allied, that we cannot avoid acknowledging between them a neceſſary

ceſſary dependence, and concluding that this unfortunate young man had been born with the cauſe of the diſeaſe which cut him off at the end of 14 years.

Many other facts conſpire to prove the long exiſtence of the fœtus in the body of the young Biſſieu. Such are, the ſize of its teeth, the fibrous degeneration of its muſcles, the induration of the brain, the abraſion of the ſkin in a great many points, the caries of ſeveral bones, the anchyloſis of others, the oſſification of the cyſt, &c. &c.; changes which require a very long time. But, admitting that this fœtus was coeval with the individual to whom it was attached, there ſtill remains, for thoſe who would explain every thing, a great difficulty to ſurmount, its ſituation in the tranſverſe meſocolon. The curious facts expoſed in this report are certainly the moſt important part of it, and are, to a certain extent, independent of any explanation which may be offered: it neceſſarily, however, became an object to ſeek, in the facts, an explanation of the phenomenon. Not unfrequently we meet with twins connected by the back, by the belly, by the head, or by ſeveral other parts. A certain degree of compreſſion, excited by the organs of the mother on the very tender embrions at the time of conception, or ſoon after, may occaſion theſe monſtroſities. In other caſes, not leſs frequent, the twins are ſo identified, that ſeveral organs wanting to each are replaced by organs common to both. In the former caſe, the monſtroſity is owing to a cauſe purely mechanical, and, in the latter, to a radical vice in the organization of the germs. To one or other of theſe cauſes we muſt neceſſarily have recourſe for the explanation of the phenomenon which forms the ſubject of report. Thus, in the caſe of Biſſieu, either one of two ſeparate germs had penetrated the other in conſequence of ſome mechanical action, or, by ſome primitive diſpoſition, of which it would be as difficult to give an account, as of every thing elſe connected with generation, they have always exiſted in the ſame way in which they were afterwards obſerved.

" One of theſe explanations being admitted, the exiſtence of a fœtus in the abdomen of another individual is no longer ſo very ſurpriſing, and the ſex of that, who has ſo long performed the function of mother, becomes nearly indifferent. This fœtus may be compared to the fruits of extra uterine conceptions. In fact, to whatever part of the abdomen the fecundated germs attach themſelves, their mode of nutrition is the ſame: in every ſituation they abſorb their nouriſhment by their own veſſels; they grow till the term marked by nature for their expulſion; and if they cannot be expelled when this term arrives, they putrefy, are converted into fat, ſhrivel, oſſify; or they grow till, by irritation of the neighbouring parts, an abſceſs is formed, through which they may be expelled. This, in ſome meaſure, had taken place in the preſent example; the ſides of the cyſt encloſing the fœtus, as in other caſes of extra uterine geſtation, had inflamed; the inflammation had extended to the inteſtine; the partition which ſeparated the two cavities had been deſtroyed; a communication had been formed between the cyſt and the colon; pus and hair had been paſſed by ſtool; and a complicated phthiſis had finally put a period to the patient's ſufferings.

"Had the fœtus been placed nearer the ſurface, the cyſt would not have opened into the inteſtine, and this phenomenon, without any change in its nature, would have appeared leſs extraordinary.

"This fœtus muſt have been nouriſhed during the whole life of the individual, who may be conſidered as its brother; the preſervation of its body from putrefaction, and the circulation of blood through its organs, leave not a doubt as to this point. The want of the organs of digeſtion, of reſpiration, generation, &c. form no objection to the life of the fœtus, ſince theſe organs, ſimply nouriſhed in ordinary fœtuſes, do not exert their functions till after birth. But the life of this fœtus conſiſted neceſſarily of a ſmall number of functions, on account of its particular ſtructure; the organs of circulation alone performed all that was neceſſary to the life of the other parts. They received and returned the blood from the meſocolon to the fœtus, and from the fœtus to the meſocolon."

VII.

A ſhort Account of the Cauſe of the Diſeaſe in Corn, called by Farmers the Blight, the Mildew, and the Ruſt. By Sir JOSEPH BANKS, Bart. 8vo. London. 1805.

THIS ſubject is ſo intereſting and important, that too much attention cannot be paid to it. Hitherto it has received very little. Agriculture and medicine are ſaid to be cloſely connected: the diſeaſes of plants and of man, and of other animals, muſt be much more ſo. We therefore deem it our duty to give a ſlight ſketch of the contents of this laudable eſſay, in order to excite the obſervation of thoſe medical men, whoſe reſidence in the country, and whoſe inclination, may diſpoſe them to inveſtigate the origin and progreſs of this vegetable diſeaſe, and to aſſiſt in diſcovering the cauſe and the cure of ſuch a formidable malady. The learned author remarks, that botaniſts have long known that the blight in corn is occaſioned by the growth of a minute paraſitic fungus on the leaves, ſtems, and glumes of the living plants. Fontana publiſhed in 1767 an elaborate account of this miſchievous weed, with microſcopic figures. More modern botaniſts, as Sowerby, have given figures both of corn and of graſs affected by it, but have not uſed high magnifying powers. Two engravings are here given from accurate drawings, which illuſtrate ſtrongly what is ſaid about theſe paraſitic plants.

It is preſumed that the ſeeds of the fungus gain admiſſion by means of the pores which exiſt on the ſtraw, the leaves, and the glumes, and at the bottom of the hollows to which they lead; they germinate and puſh their minute roots into the cellular ſubſtance beyond the bark, where they draw their nouriſhment, by intercepting the ſap that was intended for the uſe of the grain. The corn of courſe becomes ſhrivelled in proportion as the fungi are more or leſs numerous in the plant; and as the kernel only is abſtracted from the grain, while the cortical part remains undiminiſhed, the proportion of flour to bran, in blighted corn is always reduced in the ſame degree as the corn is made light. Every ſpecies of corn is ſubject to the blight, but ſpring corn is leſs damaged by it than winter, and rye leſs than wheat, probably becauſe it is up and cut down before the fungus has had time to increaſe in any great degree. The leaf probably is firſt infected in the ſpring, or early in the ſummer. The fungus is then of an orange colour; it afterwards becomes brown. Each individual fungus is ſo ſmall, that every pore on a ſtraw will produce from 20 to 40 fungi; and every one of theſe will produce at leaſt 100 ſeeds. A few diſeaſed plants will thus very ſoon infect a whole field and neighbourhood. The ſeeds are carried by the air, if permitted to ripen and to burſt. Several other curious facts are introduced, which do not ſo exactly come under the deſcription of thoſe *quæ ad nos pertinent*. This ſhort abſtract is intended to make the ſubject an object of inquiry, and to engage the phyſician, the naturaliſt, and the farmer, to work together for the public good.

VIII. & IX.

Obſervation ſur une Maladie de l'Organe de l'Ouïe guerie radicalement par la Perforation de la Membrane du Tympan. Par. J. P. MAUNOIR.

Obſervation ſur une Surdité guerie par la Perforation de la Membrane du Tympan. Par P. C. CELLIEZ.

[See Journal de Medicine, Chirurgie, Pharmacie, &c. Par M. M. Corviſart, Leroux, et Boyer, tom. ix. p. 106. et 202. 8vo. Paris. An. XIII.]

THESE caſes are important, as, in both inſtances, the operation firſt performed by Mr Aſtley Cooper effected a complete cure. The ſubject of M. Maunoir's obſervation was a man of 40, who had loſt his hearing in conſequence of a chronic affection of the fauces, which had completely obliterated the euſtachian tube. On perforating the right tympanum with a ſmall trocar, he remained ſome time ſtupid, and then exclaimed, "Au nom de Dieu, Meſſieurs, ne criez pas, vous me faites mal;" although the byſtanders were ſpeaking in a low tone of voice. In eight days this exceſſive ſenſibility ceaſed. The left ear was then perforated, without producing any effect. Twenty days after the ſecond operation, his hearing was very little diminiſhed, but there only remained a very ſmall hole in the right tympanum: to prevent it from ſhutting up, it was perforated anew, not without effect; but, on examining the left ear, it was diſcovered that the tympanum was hid by a falſe membrane, which alone had been perforated in the ſecond operation. M. Maunoir removed it entirely with a pair of forceps, and then perforated the real tympanum, which, it is remarkable, was followed by the ſame aſtoniſhment and exceſſive ſenſibility to ſound as the firſt operation.

The ſubject of Dr Celliez's caſe was a lady 59 years of age, ſubject to catarrhal affections, but who loſt her hearing twenty-two years before, during an acute diſeaſe. The one tympanum was no ſooner pierced, and the trocar withdrawn, than ſhe exclaimed, "J'entends," and requeſted the ſurgeon to ſpeak lower. The other tympanum was perforated at the ſame time, and her hearing was reſtored, but at firſt with too great a degree of ſenſibility. Dr Celliez thinks he has improved on the operation of Mr Cooper by uſing a curved trocar, and of a conſiderably larger ſize, as the chance of the perforation healing up is leſſened, and, by perforating the tympanum at its loweſt and moſt anterior edge, there can be no current of air, and there is leſs chance of any hœmorrhagy.

PART

PART III.

MEDICAL INTELLIGENCE.

Board of Health.

It is with infinite ſatisfaction that we inſert the following extract from the gazette, as it ſhows that Government is not wanting in its endeavours to promote and preſerve the general health of the inhabitants of this empire, ſo far, at leaſt, as *contagion* is concerned; and we ſincerely hope and truſt that the obviouſly good effects, which we confidently expect from the exertions of the preſent limited and local Board, will ſhow the propriety of extending its views to many other objects, and of eſtabliſhing correſponding branches in every county and large ſeaport town.

COUNCIL-OFFICE, WHITEHALL, MAY 28. 1805.

His Majeſty has been pleaſed to eſtabliſh a Board of Health, to prepare and digeſt rules and regulations for the moſt ſpeedy and effectual mode of guarding againſt the introduction and ſpreading of infection; and for purifying any ſhip or houſe, in caſe any contagious diſorder ſhould unhappily manifeſt itſelf in any part of the United Kingdom, notwithſtanding the precautions taken to guard againſt the introduction thereof; and to communicate the ſame to all magiſtrates, medical perſons, and others, his Majeſty's ſubjects, who may be deſirous, and may apply to be made acquainted therewith.

The ſaid Board hold their meetings at Somerſet-Place, and is compoſed of the following perſons, viz. Sir Andrew Snape Hamond, Bart. Comptroller of his Majeſty's Navy, Preſident—Sir Lucas Pepys, Bart. Preſident of the Royal College of Phyſicians—Dr Reynolds, Sir Francis Milman, Bart. Dr Hunter, Dr Heberden, Fellows of the ſaid Royal College—Sir Alexander Munro, one of the Commiſſioners of his Majeſty's Cuſtoms—Dr Harneſs, ſenior Member of the Board for the care of ſick and wounded ſeamen.

New Medical and Surgical Society in London.

We have great pleaſure in informing our readers that a new Medical and Surgical Society is about to be eſtabliſhed in London, for the purpoſe of "converſation on profeſſional ſubjects, for the reception of communications, and for the eſtabliſhment of a library." From an inſtitution of this nature in the metropolis, conſiderable utility may be expected to accrue, eſpecially when conducted by gentlemen of the higheſt reputation and reſpectability in the profeſſion; many of whom, beſides thoſe whoſe names are in the liſt of the committee, have expreſſed their warmeſt hopes for the ſucceſs of the inſtitution, and their intentions of promoting it, by their perſonal aſſiſtance, as much as their avocations will permit. At a meeting of phyſicians and ſurgeons, held at the Free Maſons' Tavern on the 22d of May, the following gentlemen were appointed a committee for digeſting a plan for the management of the ſociety, according to a baſis agreed upon at that meeting; viz. Mr Abernethy—Dr Babington—Dr Baillie—Dr Bateman—Dr Blane—Sir William Blizard—Dr Clarke—Mr Cooper—Dr Curry—Sir Walter Farquhar—Dr Frampton—Mr Forſter—Mr Heaviſide—Dr Marcet—Dr Saunders—Mr Thomas—Mr Wilſon—Dr Yelloly.

Progreſs of Vaccination.

In preparing the notice of the progreſs of vaccination inſerted in our laſt Number, we were ſtruck with the difference of the numbers ſtated to have died of the ſmall-pox, during the two laſt years, by the two great Vaccine Inſtitutions of the metropolis. As we could not ſuppoſe that either of theſe had wilfully publiſhed a miſtatement, and we had at that time no means of aſcertaining which was correct, we thought it moſt impartial and proper to publiſh both, leaving each to reſt on its own authority. We have ſince been honoured with a letter from the Broad-ſtreet Vaccine Inſtitution, encloſing the bills of mortality, with which the ſtatement of that ſociety perfectly coincides. We cannot altogether account for the error into which the Royal Jennerian Society has inadvertently fallen; but we may obſerve, that if the monthly deaths had been accurately ſtated by it, the ſum-total is incorrect, as, inſtead of 586, it ſhould have been 636. The fundamental error has not, however, eſcaped the notice of the ſociety itſelf, as, in the report of the annual general meeting, 6th March 1805, the proper number, 622, is inſerted. On account of this miſtake, we have thought it proper to inſert the deaths from ſmall-pox during the laſt 18 years, as ſtated in the bills of mortality.

A.D.	1804.	1803.	1802.	1801.	1800.	1799.	1798.	1797.	1796.
Died.	622.	1202.	1579.	1461.	2409.	1111.	2237.	522.	3547.
A.D.	1795.	1794.	1793.	1792.	1791.	1790.	1789.	1788.	1787.
Died.	1040.	1913.	2382.	1568.	1747.	1617.	2077.	1001.	2418.

In compliance with the deſire of the Broad-ſtreet Vaccine Inſtitution, we inſert the following Reſolutions, contained in their laſt Quarterly Report:—

1. Reſolved, That it appears from the numerous reports that have been tranſmitted or atteſted by the members of the medical eſtabliſhment from abroad, from our own country, and from their own experience, that the proportion of failures in the cow-pock inoculation to give ſecurity againſt the ſmall-pox, which have been publiſhed, does not amount to more than 50 out of 250,000 vaccinated perſons.

2. Reſolved, That it does not appear, on examination of the publiſhed reports of theſe failures, and the inveſtigation of many of them by the medical eſtabliſhment of this inſtitution, that TEN have been ſubſtantiated by admiſſible and adequate evidence.

3. Reſolved, That it ſeems more than probable, that all or many of even the admitted-of failures, according to the evidence produced, are liable to be deceptions, on the ſame grounds as in the aſſerted caſes of the occurrences of the ſmall-pox, ſubſequent to the ſmall-pox.

4. Reſolved, That, conſidering that the cow-pock inoculation has been the practice of producing an affection which practitioners, in the firſt inſtances, in general had not previouſly ſeen, and the hiſtory of which was ſo little known, and, conſidering the greater deceptions than in the ſmall-pox inoculation to which practitioners are expoſed, it was to have been expected that a much greater proportion of ſuppoſed failures would have occurred.

5. Reſolved, That it does not appear that a ſingle inſtance has occurred of the ſmall-pox, ſubſequent to the cow-pock, during more than five years practice, at this inſtitution; for, on inquiry, two inſtances, which were ſaid to be ſuch, were found to be inadmiſſible caſes: viz. one of them, on account of the ſuppoſed cow-pock preceding, being only a local affection; and, in the other, that it was only proved that there was a local affection from the variolous inoculation.

6. Reſolved, That the numerous inſtances of expoſure of vaccinated perſons to the ſmall-pox, ſince the commencement of the practice in January 1799, and likewiſe of repeated reinoculation with ſmall-pox matter at this inſtitution, and which have been communicated, eſtabliſh the fact, that a perſon who has really gone through the cow-pock is incapable of the ſmall-pox, on as firm ground as the fact of variolous inoculation giving ſecurity againſt the ſmall-pox.

7. Reſolved, That, conſidering the novelty of the practice of vaccine inoculation, and that it has not been performed, in many inſtances, after ſuch a mode as might give the greateſt chance of ſecurity, it is adviſable to take precautionary meaſures with many who have been inoculated, or who ſhall undergo the practice in future.

8. Reſolved, That the teſts of patients who have been inoculated being ſecure are, expoſure to effluvia, and contact with perſons in the ſmall-pox; inoculation with ſmall-pox matter, and reinoculation with

vaccine matter. But, for reaſons ſet forth in a memoir read at the quarterly meeting by Dr Pearſon, the repetition of reinoculation with vaccine matter is a preferable teſt; for it does not appear, from abundant evidence brought forward by the experience of Dr Pearſon, that a perſon who has gone through the cow-pock is ſuſceptible of it a ſecond time.

9. Reſolved, That ſuch practitioners as are deſirous of ſeeing proofs of the propoſition laſt ſtated (that a ſecond inoculation for the cow-pock is an equally deciſive teſt of the queſtion of the ſuſceptibility of a vaccinated perſon to take the ſmall-pox, as inoculation with variolous matter) be invited to attend at the Inſtitution for that purpoſe.

10. Reſolved, That although it is probable, from the amount of the deaths by the ſmall-pox in the bills of mortality in two preceding years, viz. in 1803, of 1202, and in 1804, of 622, that the proportion of deaths by that diſeaſe has been diminiſhed by vaccine inoculation; yet it does not appear juſtifiable to draw this concluſion poſitively at preſent, becauſe, in former years, previouſly to the new practice, even a ſtill ſmaller proportion occurred by ſmall-pox; viz. in 1795 there were 1040, in 1797 there were only 522, and in 1799 there were 1111; therefore, that it will require at leaſt five ſucceſſive years of vaccine practice to draw a juſt inference.

11. Reſolved, That Dr Pearſon be requeſted to allow the Memoir on the State of the Practice of Vaccination, and on the conduct of it, to be printed, in order to quiet the minds of many families diſturbed by the late unfavourable reports.

12. Reſolved, That the Medical Eſtabliſhment continue the practice of regiſtering their obſervations, as the moſt likely means to reduce to certainty the vaccine practice as a prophylactic of the ſmall-pox.

By order,
William Sancho, *Secretary*.

Account of Diſeaſes treated at the Public Diſpenſary, Carey-Street, from 31ſt May to 31ſt Auguſt, 1805.

ACUTE DISEASES.

	No. of Cases.		*No. of Cases.*
Tertiana - - -	7	Pneumonia - -	12
Quotidiana - -	1	Pertuſſis - - -	5
Ophthalmia - -	3	Urticaria - - -	1
Phrenitis - - -	1	Herpes (ſhingles) - -	1
Cynanche tonſillaris -	9	Eryſipelas - - -	1
——— parotidæa -	1	Rheumatiſmus acutus -	2
Catarrhus - -	54	Febris Infantium -	6

CHRONIC DISEASES.

	No. of Caſes.		*No. of Caſes.*
Cephalæa	14	Menorrhagia	5
Catarrhus chronicus	52	Amenorrhœa	5
Hæmoptyſis and Phthiſis	29	Leucorrhœa	3
Aſthma	3	Schirrus Uteri	4
Dyſpnœa	5	Prolapſus Uteri	1
Dyſpepſia	40	Hyſteria	8
Dyſphagia	1	Epilepſia	2
Aſthenia	29	Paralyſis	10
Colica Pictonum	1	Rheumatiſmus chronicus	30
Verminatio	21	Lumbago	4
Diarrhœa	5	Anaſarca	6
Dyſenteria	5	Hydrothorax	3
Tabes meſenterica	3	Aſcites	2
Enterodynia	8	Phyſconia	1
Hæmorrhois	6	Scrofula	3
Prolapſus Ani	1	Purpura, or Petechiæ ſine Febre	1
Icterus	1		
Hepatitis chronica	2	Impetigo (running tetter)	5
Nephralgia	2	Ecthyma (ulcerated tetter)	1
Dyſuria	2	Scabies (Itch)	13
Enureſis	1	Porrigo (Scald-head)	1

The continuance of cold weather, with almoſt conſtant north-eaſt winds, has protracted the ſeaſon of catarrhal and rheumatic complaints beyond the uſual period. With the exception of theſe, however, and the diſorders of the ſtomach, which are conſtantly induced by the moral and phyſical circumſtances peculiar to crowded cities, no claſs of diſeaſes has been prevalent to any extent. The remarkable diminution, or rather abſence, of acute contagious diſeaſes, which was noticed in the laſt report, ſtill continues to be obſerved; a few caſes of hooping-cough being the only inſtances which have required our attention in this diſtrict.

The majority of the intermittent fevers, which we occaſionally ſee in London, is brought from the marſhy parts of the country: but inſtances ſometimes occur which cannot be traced to the miaſmata of marſhes, nor even to unwholeſome exhalations from damp and uncleanly ſituations of any kind. One of the patients in the preceding liſt had not been abſent from London for many years, and has lived during the laſt eight months in a court between Holborn and the north ſide of Lincoln's-Inn Fields; yet he was attacked with a very obſtinate tertian. From ſimilar facts it has been inferred, that intermittents occaſionally occur, independent of the operation of marſh miaſmata*. But, in attempting to aſcertain the origin of intermittents, one circumſtance requires attention, viz. The period during which the influence of miaſmata may lie dormant in the conſtitution, or the time which may intervene between the expoſure of the perſon and the commencement of the diſeaſe. An inattention to this circumſtance tends very much to invalidate the concluſion which might be drawn from the caſes of Dr Beddoes. The firſt caſe which appeared at the Diſpenſary commenced in March; the patient had reſided in London ſince the beginning of December, at which time he returned from Eſſex. About the ſame time, two patients attacked with ague, who had alſo returned to town from Kent or Eſſex early in December, applied to a medical friend in the city. In theſe inſtances, a period of three months had elapſed between the infection (if the term may be uſed) by miaſmata, and the appearance of the conſequent ague.

Another patient in the above liſt, after reſiding ſeveral months at Sheerneſs, returned to London in November laſt, and, in the beginning of the preſent month, was ſeized with tertian, having lived during an interval of nearly half a year in Liquor-pond Street, Gray's-Inn-lane. From theſe facts it would appear, that the latent period of intermittents is very indefinite, probably greater and more irregular than that of continued fever, according even to the extenſive limits allowed by Dr Haygarth.

The caſe of herpes, or ſhingles (zona herpetica, zona ignea, zoſter, and ignis ſacer of different authors), is placed among the acute diſeaſes, becauſe, except that it is not contagious, and probably may occur more than once in the ſame individual, it has every affinity with the febrile exanthemata. There is conſiderable confuſion in the deſcriptions and characters of the diſeaſe deſcribed by different writers under theſe names. Some include an acute, others a chronic diſeaſe, ſome a puſtular, others a veſicular eruption, and ſome an ulcerous affection, under the ſame denomination. Hoffman † conſiders the zona ignea as a ſpecies of eryſipelas, and the ignis ſacer of Celſus ‡ as ſynonimous with the herpes exedens. But Burſerius ‖ treats of the zona, the diſeaſe in queſtion, under the title of ignis ſacer; diſtinct from the eryſipelas, but in the ſame claſs of febrile exanthemata. Much of this diſagreement has probably ariſen from inattention in the uſe of the word *puſtule*, which is applied indiſcriminately to the *puſtule* properly ſo called, and to the *veſicle* or *phlyctæna*. The diſeaſe is not of very frequent occurrence; but, in the few caſes which I have ſeen, its courſe and ſymptoms have been tolerably uniform. The patients have complained of a ſenſe of heat, and of ſhooting pains through the cheſt or epigaſtric region, attended with ſlight febrile ſymptoms for three or four days; a few patches of papulæ then appeared about the breaſt or ſhoulders, with a circumſcribed effloreſcence around them: theſe put on ſpeedily a veſicular appearance, and in two or three days formed a circular or oval cluſter of tranſparent veſicles, whilſt other patches of papulæ continued to appear, with a certain degree of regularity, nearly in a line extending from the ſternum to the ſpine on one ſide, ſometimes like half a ſaſh round the waiſt, ſometimes like a ſword-belt acroſs the ſhoulder. "Hac tamen perpetua lege, ut ab anteriore parte nunquam lineam albam, nunquam a poſtica ſpinam tranſcenderent [*]." The veſicles, which firſt appeared, having become large and confluent, loſt their tranſparency, acquired a blue or livid colour, and ſunk into a brown ſcab. Thoſe patches which appeared later went through the ſame courſe, and in ten or twelve days nothing but the thin brown ſcabs remained. Slight febrile ſymptoms continued during the whole progreſs; but the moſt diſtreſſing part of the diſeaſe was an intenſe darting pain which came on at the cloſe, and which was ſcarcely to be allayed by the power of opium. This accords with the obſervation of Hoffman: "Inde quidem ſymptomata remiſerunt, excepto exquiſito ardente dolore, qui tantus erat, ut nec ſomnum capere, nec locum affectum contingere poſſet [†]." The complaint is generally mild, and, I believe, harmleſs; and ſlight debility enſues. Gentle laxatives and diaphoretics, with occaſional anodynes, ſeem to be the only medicines requiſite to alleviate the ſymptoms during its courſe.

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* Two cases, which were produced in persons who constantly resided in the most healthy parts of the metropolis, are mentioned by Dr Willan. See Reports on Dis. in London, p. 48. And three, which occurred at Bristol during a hard frost in February, are related by Dr Beddoes.—*Medical Facts and Obs. vol.* 7.

† Oper. tom. iv. p. 1. cap. xiii. § 5.

‡ De Med. lib. v. cap. xxviii, § 1. "Sacer quoque ignis malis ulceribus annumerari debet," &c.

‖ Inst. Med. Pract. tom. ii. cap. 3.

Profeſſor Calliſen [‡] has given the following deſcription of the diſeaſe with his uſual terſeneſs: "Zona, cingulum, zoſter, vocatur ſpecies herpetis, quæ ſub forma veſicularum flaveſcentium, liveſcentium, juxta truncum corporis prorumpit; rare artus occupat, rariſſime medium corpus tanquam cingulum circumdat ac amplectitur totum, gravi dolore urente ac febre ſtipata. - - - ſolis remediis internis puriſicantibus, demulcentibus, lenibus diaphoreticis tractandus - - - Graviora ſymptomata interdum methodum poſcant antiphlogiſticam."

May 31. 1805.

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[*] De Haen de Divis. Febr. p. 112. a caſe quoted by Burserius. There is a notion, as old as Pliny, that if it completely surrounds the body, it is fatal. "Zoster appellatur, et enecat si cinxerit." Nat. Hist. lib. xxvi. cap. 11.

[†] Opera, tom. iv. cap. xiii. § 6.

[‡] Syst. Chirurg. Hodiern. tom. i. p. 421.

On the 24th of June, the SENATUS ACADEMICUS of the Univerſity of Edinburgh conferred the degree of Doctor in Medicine on the following Gentlemen, after having gone through the appointed examinations, and publicly defended their reſpective Inaugural Diſſertations.

FROM AMERICA.

James Maury Morris,	*De Cynanche maligna*
Samuel Stuart Griffin,	*De Terra natorum Vegetatione*

FROM BARBADOES.

Arthur R. Hollingſworth,	*De Urethræ Strictura*
William Huſbands,	*De Menſibus, eorumque Emanſione*
Daniel Thomas Malloney,	*De Uſu Aquæ frigidæ in Febribus*

FROM ENGLAND.

John Booth,	*De Arthritide*
Edmund Lockyer,	*De Chorea*
Michael Allen Prynn,	*De Dyſpepſia*
Daniel Thompſon,	*De Scarlatina*

FROM IRELAND.

Bernard Campbell,	*De Apoplexia*
Robert Drought,	*De Chloroſi*
Thomas Ferris,	*De Hydrocephalo interno*
Richard Gamble,	*De Scarlatina*
Terence Henry,	*De Typho*
Charles D. Johnſton,	*De Gangræna noſocomiali*
George Lee,	*De Hydrothorace*
Eugene M'Swyny,	*De Apoplexia*
Samuel Mercer,	*De Chorea Sancti Viti*
John M'Mullin,	*De Erythemate mercuriali*
Maurice Neligan,	*De Ferro*
Laurence B. Neligan,	*De Morbis Reſpirationis*
Abraham C. Orpen,	*De Uſu Purgantium*
John O'Dwyer,	*De Cynanche tracheali*
Edmund O'Leary,	*De Phthiſi pulmonali*
Eugene Sullivan,	*De Hydrocephalo interno*

FROM SCOTLAND.

John Ford Anderſon,	*De Lumborum Arthropuoſi*
James Barclay,	*De Apoplexia*
John Barron,	*De Nutritione Fœtus*
John Garrack,	*De Febre continua*
John Gordon,	*De Vulnere Naturæ ſanando*
John Lindſay,	*De Febre remittente Indiæ Occidentalis*
Allan Macdowall,	*De Dyſpepſia*
John Miller,	*De Lacte humano*
Alexander Roſs,	*De Carcinomate*

FROM WALES.

Lewis Evans,	*De Diabete mellito*
John Howell,	*De Ambuſtionibus.*

As we believe that the Regulations obſerved in the Univerſity of Edinburgh in promoting Candidates to the degree of Doctor in Medicine are not ſufficiently known, we have tranſlated the Statuta Solennia, as lately reprinted from the minutes of the Univerſity, both that the public may be enabled to judge of the reſpectability of an Edinburgh degree, and that thoſe at a diſtance may know the conditions upon which only it can be obtained.

I.—No perſon ſhall be promoted to the degree of Doctor in Medicine, except on one of two ſtated days in every year; viz. on the 24th of June or 12th of September, or the days immediately thereafter.

II.—No perſon ſhall be received as a candidate, until he has applied during three complete years to the ſtudy of Medicine in this or ſome other univerſity, and has attended to all the branches of the ſcience of Medicine; viz. Anatomy and Surgery, Chemiſtry, Botany, Materia Medica, and Pharmacy, Theory and Practice of Medicine, and Clinical Lectures delivered by Profeſſors of Medicine on hoſpital patients.

III.—Whoever is deſirous of obtaining a degree muſt deliver, before the 24th of March or 12th of June, a medical diſſertation, compoſed by himſelf, to ſome one of the Medical Profeſſors, that he may peruſe it, if neceſſary correct it, and affix to it a written teſtimony that he has peruſed it, with the date when he received it.

IV.—Then, whoever is deſirous of a degree in medicine muſt communicate his intention to the Dean of the Faculty of Medicine on or before the 20th of April or June, and at the ſame time deliver to him his inaugural diſſertation, with the teſtimony of the Profeſſor who peruſed it, to be ſubjected to the conſideration of the Faculty of Medicine.

V.—After this, he is to undergo a medical examination by the Faculty, either *viva voce* or in writing, that no perſon may be received as a candidate who is not well acquainted with polite literature and the ſcience of medicine [*].

VI.—On the 18th of May or 6th of Auguſt, the candidate ſhall, in an examination by two Profeſſors, in the preſence of the Faculty of Medicine, give a farther proof of his advancement in the various branches of medical knowledge enumerated above.

VII.—To the candidate, after having paſſed theſe trials, ſhall be propoſed, by ſome one of the Profeſſors, an *Aphoriſm of Hippocrates*, and, at the ſame time, by another Profeſſor, a *Medical Queſtion*; the former of which explained by himſelf, and illuſtrated by a commentary, and the latter, along with an anſwer to it, ſupported by proper arguments, he ſhall return to the Profeſſors by whom they were propoſed on the 28th of May or 11th of Auguſt, and ſhall defend his commentary, and anſwer before the Faculty of Medicine on the 30th of May or 18th of Auguſt.

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[*] In a translation of these statutes, published in the Edinburgh newspapers, by order of the Senatus Academicus, on the 8th December 1783, to this regulation the following observation is annexed: "As the Professors think themselves bound in honour not to divulge the unfavourable result of an examination, a candidate may be remitted to his studies, in this stage of his trials, without injury to his reputation or interest."

VIII.—If, by having duly fulfilled theſe conditions, the candidate ſhall deſerve to be promoted, he ſhall receive from two of the Profeſſors two hiſtories of diſeaſes, with queſtions annexed to them, for the purpoſe of writing an illuſtration of the one, and anſwers to the others. Theſe hiſtories, with the illuſtrations and anſwers, he ſhall deliver on the 12th of June or 1ſt of September to the Profeſſor who propoſed them, and defend them before the Faculty of Medicine on the 15th of June or 3d of September.

IX.—After the candidate has been approved of at his firſt examination on the 18th of May or 6th of Auguſt, he ſhall be permitted to ſend his diſſertation to the preſs, and ſhall deliver eight copies, accurately printed, to the Dean of the Faculty of Medicine, on the 15th June or 3d of September.

X.—If the candidate, after having printed his diſſertation, ſhall be approved of by the Medical Faculty at his third examination, all theſe proceedings ſhall be reported to the Senatus Academicus by the Dean of the Faculty of Medicine, with whoſe approbation and authority he ſhall be ordered to publiſh his diſſertation, and defend it in a meeting of the Univerſity on the 24th of June or 12th of September, when, if the Senatus ſhall think fit, the higheſt medical honours, that is, the degree of Doctor in Medicine, ſhall be conferred on him with the uſual ſolemnities, as the reward of his diligence and ſtudy.

XI.—To give greater ſolemnity to all theſe proceedings, the Faculty of Medicine ſhall always meet within the Univerſity, on each of the abovementioned days, at nine in the morning. And if any candidate ſhall abſent himſelf at the hour appointed, without ſufficient reaſon, he ſhall not be permitted, on this occaſion, to proceed with his trials, or obtain the degree of Doctor in Medicine.

XII.—All the above-mentioned exerciſes ſhall be performed in the Latin tongue.

☞ Communications may be addreſſed to Meſſ. Constable and Co. Bookſellers, Edinburgh; Longman, Hurst, Rees, and Orme, London; or Gilbert and Hodges, Dublin.

⁂ *The Second Edition of No.* I. *was publiſhed in May, and No.* IV. *will be publiſhed on Tueſday, 1ſt October* 1803.

POSTSCRIPT,

Containing an Account of the *Diſcovery of the Compoſition of Muriatic Acid.* By PROFESSOR PACCHIONI of Piſa.

SINCE this Number of our Journal was completed, and indeed part of the impreſſion ſent to London, we have received a letter, dated 15th May 1805, from our valuable and eminent correſpondent, Fabbroni of Florence; in which he ſays, "A brilliant diſcovery has been made by one of my friends. I have encloſed an accouut of it, which you will tranſmit to my reſpectable and dear friend Kirwan, after having communicated it to the philoſophers of your country through the medium of your Journal." We therefore gladly take this means, though ſomewhat irregular, of complying with his requeſt, and of giving to our readers the earlieſt poſſible notice of the diſcovery alluded to, by tranſlating the pamphlet in which it is announced.

Lettera del Dottor FRANCESCO PACCHIONI, Profeſſore di Fiſica nell' Univerſita di Piſa, al chiariſſimo Sig. Auditore LORENZO PIGNOTTI, Conſultore et Iſtoriografo Regio.

"To you, my much reſpected friend, both on account of the ſpontaneous impulſe of innate kindneſs with which you deigned to take ſo much care of my talents, ſuch as they are, as to receive me among the number of your pupils, and on account of your having paved the way for my obtaining that very chair which was filled by you for many years with ſo much applauſe and honour to our country, rather than to any other perſon, ſhall I give an account of a diſcovery which I have made and ſatisfactorily verified. But theſe are not the only reaſons by which my conduct is influenced. I wiſh, at the ſame time, to ſhow my gratitude towards you, and to give you a proof that I am endeavouring to render myſelf more worthy of your eſteem and friendſhip.

"It is perfectly known to you that, ſince laſt year, on account of the premiums propoſed by that excellent general and philoſopher Bonaparte, Emperor of the French, for the advancement of that new and fertile branch of experimental philoſophy diſcovered by the celebrated Profeſſor of Bologna, Galvani, and afterwards wonderfully extended by the ſublime genius of Volta, I have contrived a great number of experiments, which I have performed with much care, and almoſt completed. Theſe experiments have revealed to me many facts, which I am collecting for a memoir to be preſented to the *Societa Italiana;* and have led me to a knowledge of the conſtituent elements of an acid which has hitherto proved refractory to all the efforts of chemiſtry. I ſpeak of the muriatic acid, hitherto tortured in vain [*] with the electric ſpark, caloric, and all the play of affinity. You are perfectly acquainted with the different and diſcordant opinions of the moſt recent and approved writers concerning the nature of this acid; ſome of them conſidering it as a ſimple combuſtible body, others as formed of an unknown baſe combined with oxygen, and, laſtly, others as a ſimple ſubſtance naturally acid. But theſe opinions have not contributed to the advancement of ſcience, and are juſtly eſteemed as mere hypotheſes deſtitute of proof.

Having, however, neglected theſe hypotheſes, and conſidered the means by which the diſcovery of the nature of this acid has been hitherto attempted, it appeared to me that one had not yet been tried, viz. the continued action of the pile of the celebrated Volta, and I ſuſpected that it might aſſiſt in leading me to diſcoveries which had hitherto eſcaped the reſearch of experimental philoſophers. As far as I can judge, my endeavours have been crowned with ſucceſs, and have furniſhed me with ſatisfactory evidence of the nature of the conſtituent principles of muriatic acid.

The ſimplicity of the apparatus, and of the means adopted to attain my views, the care with which I endeavoured to avoid every ſource of error, have, I hope, ſufficiently ſecured me againſt thoſe illuſions which frequently deceive young men ardent in the purſuit of ſcience, and even thoſe practiſed in the art of extorting from nature her ſecrets. Want of time prevents me from relating the ſeries of experiments by which I arrived at the diſcovery I have mentioned; but you may ſee it by peruſing the manuſcript of my memoir, which will be immediately publiſhed, to ſubmit my reſearches and their reſults to the judgment of the learned. For the preſent, I ſhall ſelect from the experiments and facts therein deſcribed thoſe which are deciſive, and which eſtabliſh, in an evident manner, the following truths:

I. *Muriatic acid is an oxide of hydrogen*, and conſequently compoſed of hydrogen and oxygen.

II. *In the oxygenated muriatic acid, and therefore,* a fortiori, *in muriatic acid, there is a much leſs proportion of oxygen than in water.*

III. *Hydrogen is ſuſceptible of very many and different degrees of oxidation*, contrary to what is univerſally believed by pneumatic chemiſts, who aſſert that hydrogen is ſuſceptible only of one invariable degree of oxidation, that in which it forms water.

Having at firſt obſerved the phenomenon of the decompoſition of water by the Galvanic pile, and having, by accurate experiments, aſcertained the true theory, I readily diſcovered a very ſimple and exact apparatus, in which I could diſtinctly perceive the changes which happen to water, which, from the continued action of the Galvanic pile, is continually loſing its oxygen at the ſurface of a wire of very pure gold immerſed in it.

I therefore proceeded to examine theſe gradual changes of water thus loſing its oxygen, and I at laſt obſerved a very ſingular fact, which unequivocally indicated the formation of an acid. In other antecedent experiments, I had examined the nature of the air obtained before arriving at this remarkable point, and I always found, by means of the eudiometer of Giobert, that it was very pure oxygen*, as the reſiduum ſcarcely amounted to one ſixtieth.

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[*] Prof. Pacchioni could not poſsibly know that his diſcoveries had been in ſome meaſure anticipated by Mr Peel at Cambridge.

Having thus examined the nature of the air formed in various experiments, from the firſt moment of decompoſition until there were evident indications of the formation of an acid, I began to endeavour to determine, in a more poſitive manner, the exiſtence and nature of this acid.

When the water, or, to ſpeak more accurately, the reſidual fluid, occupied about half the capacity of the receiver which at firſt contained the water, this reſidual fluid preſented the following characters.

Its *colour* was an orange yellow, more or leſs deep, according as the bulk of the reſidual liquor was greater or leſs, and it reſembled in appearance a true ſolution of gold.

From the inferior orifice of the veſſel, which was cloſed with a piece of taffety, and then with double bladder, there eſcaped a *ſmell* which was eaſily recogniſed to be that of oxygenated muriatic acid.

The gold wire had in part loſt its metallic luſtre, and its ſurface appeared as if corroded by a ſolvent.

The bit of taffety which had been in contact with the coloured fluid, in conſequence of its action, was eaſily torn, as is uſual with ſimilar bodies when half-burnt (ſemi-combuſto).

Around the edges of the veſſel, on the bladder, there was formed a deep purple ring, which ſurrounded a circular ſpace rendered entirely colourleſs, or white.

A drop of this fluid tinged the ſkin of the hand, after ſome hours, with a beautiful roſe colour.

Having obtained, in various ſucceſſive experiments, the ſame liquid, poſſeſſing conſtantly the ſame properties, I choſe that obtained in the laſt experiment to ſubject it to chemical examination. The very able chemiſt of this univerſity, Sig. Giuſeppe Branchi, had the goodneſs to enter zealouſly into my views, and in his laboratory we eaſily proved,

1. The exiſtence of a volatile acid by the white vapours, which were formed by ammonia placed near it.

2. That this acid was certainly oxygenated muriatic acid, ſince it formed in nitrate of ſilver a curdy precipitate, the luna cornea of the antients, or the muriate of ſilver of the moderns. From theſe facts we may draw the following poſitive and undeniable reſults:

1. Muriatic acid is an oxide of hydrogen, and is therefore compoſed of hydrogen and oxygen.

2. Oxygenated muriatic acid, and of courſe muriatic acid, contains leſs oxygen than water does.

3. Hydrogen has not one degree of oxygenation, but many. One of theſe conſtitutes water, another below it oxygenated muriatic acid, and, below this, there is another which conſtitutes muriatic acid.

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* In all experiments we are acquainted with, hydrogen gas was always evolved; but as we have no information concerning the arrangement of Prof. Pacchioni's apparatus, we cannot adduce this fact as concluſive againſt the accuracy of his experiments.—*Editors.*

I ſhall mention the other degrees in another memoir, which will be publiſhed immediately.

Theſe, my much eſteemed friend, are the deciſive facts and experiments which exclude every doubt, and which confirm my fortunate conjectures. It is long ſince experimental philoſophy may be ſaid to have become a ſource of wonders. The tranſmutation of azote into nitrous acid, and of hydrogen into water, appear to me truly wonderful; and your genius will enable you readily to judge whether the ſame epithet may be applied to the metamorphoſis of water into the true ſolvent of gold and platinum, into that volatile ſubſtance which attacks and neutralizes peſtilential miaſmata, and preſents ſo many reſources to philoſophy and the arts.

After having thus diſcovered the elements of this refractory ſubſtance, I am engaged in determining their proportions by experiment and calculation.

To me it appears, that the origin and nature of muriatic acid being now known, there is no longer any myſtery in its formation, nor in that of the muriatic ſalts in the vaſt extent of the ocean. But theſe and other deductions will be explained by me in another place. They will have already occurred to you, and I ſhould exceed the limits of this letter, if I were to enter farther into the ſubject. With the moſt profound eſteem and ſincere attachment, I have the honour of ſubſcribing myſelf

Your much obliged ſervant and friend,

Piſa, 9th May, 1805. FRANCIS PACCHIONI.

Contrary as the reſults announced in this intereſting communication are to analogy, there are ſome facts from which they receive at leaſt ſuch a degree of confirmation as to entitle them to the attention of every one zealous in the cultivation of ſcience. In 1801, Mr Cruickſhank diſcovered that infuſion of litmus was reddened by the one end of the pile, and infuſion of Brazil wood rendered purple by the other; but he ſuppoſed theſe effects to be owing to the formation of nitrous acid and ammonia; and only a few days before Prof. Pacchioni's letter was publiſhed at Piſa, the formation of muriatic acid by the Galvanic action was announced in London *, in a letter from Mr Peel, dated Cambridge, 23d April 1805; from which, in juſtice to our countryman, and in confirmation of the general fact, we extract the following paſſages.

"I took about a pint of diſtilled water, and decompoſed one half of it by means of Galvaniſm; the other half I evaporated, and I found to remain at the bottom of the glaſs a ſmall quantity of ſalt, which, upon examination, proved to be muriate of ſoda.—The ſalt could not have been contained in the water before I made the experiment, becauſe I uſed every precaution to have it free from impurities. I even took the trouble to repeat the experiment, though a tedious one, and I again obtained the ſame reſult. A friend of mine juſt informs me that he has tried my experiment, and has ſucceeded in procuring the ſalt."

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* Philoſophical Magazine for April 1805, p. 279.

THE

EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

1. OCTOBER, 1805.

PART I.

ORIGINAL COMMUNICATIONS.

I.

Caſe of Hepatitis followed by Bilious Expectoration. By ALEXANDER MONRO Jun. M. D. F. R. S. Profeſſor of Anatomy and Surgery in the Univerſity of Edinburgh.

MR M——, a ſtout young man, 22 years of age, having been expoſed to cold during the night, after ſevere military duty *, was ſeized with the uſual ſymptoms of hepatitis, which, though apparently ſlight, were ſoon followed by thoſe of ſuppuration. He had a conſtant tickling cough, accompanied with a difficulty in breathing, and ſenſe of oppreſſion at his breaſt, though without pain, except what the cough ſometimes excited.

In a few days he began to expectorate, and in conſiderable quantity, a viſcid, purulent mucus, which, the day following, was found to be mixed with a fluid like the waſhings of raw fleſh, and alſo with a fluid reſembling bile in colour, and of a bitter taſte.

Mixed with the fluid diſcharged by expectoration, there were alſo a number of ſmall hard maſſes, ſome of which were like very ſmall portions of the liver, others like pieces of cartilage.

The ſymptoms were at firſt much relieved by the expectora-

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* It may not be improper to add, that this gentleman carried the colours of the regiment, and imputed his complaint to his having ſupported the end of the ſhaft of the colours upon his right ſide.

tion, but recurred in about an hour, and again gave way, upon a copious expectoration coming on.

The patient, before the expectoration, complained of a bitter taſte in his mouth; the ſenſe of oppreſſion was increaſed; his reſpiration became quicker, and was accompanied with a wheezing noiſe, which, to make uſe of the patient's own ſimile, was like air paſſing quickly through a fluid.

The quantity expectorated was different at different times; it was increaſed from eating, and remarkably ſo an hour or two after dinner, when the cough was at times ſo ſevere as to induce vomiting.

The expectoration was alſo increaſed by eating ſoup, or any kind of vegetable; alſo from drinking wine or ſpirits.

All his complaints were aggravated by coſtiveneſs.

His ſleep was greatly diſturbed and interrupted, from the neceſſity he was under of getting up every two hours during the night to expectorate; the quantity diſcharged by coughing during the night being commonly equal to what he ſpat up in the courſe of two mornings. The whole quantity in 24 hours was from 10 to 15 ounces.

He ſuffered great oppreſſion when lying on his back. His eaſieſt poſture was when his head and ſhoulders were conſiderably raiſed, and his body inclined to the right ſide.

There was not any perceptible enlargement of the liver.

Though his indiſpoſition confined him to his room, his appetite was tolerably good, and except occaſional flatulency and coſtiveneſs, he had no ſymptom of dyſpepſia.

His ſtools were natural as to quantity, but of a clay colour. His urine, during the paroxyſms of fever, oppreſſion, &c. was in ſmall quantity, of a high colour, and depoſited a pink ſediment.

His eyes and ſkin never had the ſlighteſt tinge of yellow. His pulſe was commonly from 80 to 100 in the minute, and, from all all accounts, had been more frequent at the firſt, than during any of the ſubſequent attacks of the diſeaſe.

The preceding is a deſcription of the ſymptoms of the complaint at the beginning, and in the months of September and October 1799, during which period he took calomel and other purgative medicines, and he thinks with advantage; although he does not impute his recovery to the operation of any medicine, the diſeaſe having ceaſed rather ſuddenly, and without any apparent cauſe. For nearly two years, he enjoyed tolerable health, with the exception of a ſlight relapſe, which continued only one or two days.

In the month of March 1801, after eating apples, and drinking a conſiderable quantity of punch, his complaint returned, and continued for about two months, and again yielded to the uſe of purgatives. The ſpring following it again returned, and without any obvious cauſe, continuing for ſix weeks.

About the end of October 1804 he had a fourth attack, which he imputed to catching cold; and this laſt continued until the month of April, when he left Edinburgh.

OBSERVATIONS ON THE PRECEDING CASE.

The hepatitis, or inflammation of the liver, a diſeaſe ſo frequent in tropical climates, and the great endemic of the peninſula of India, is one that rarely occurs in this country, or indeed in Europe.

When we meet with it, it is commonly only a partial inflammation, as in the preceding caſe, terminating in a partial ſuppuration of this bowel. The matter formed, after ſome time, uſually makes its way through the ductus communis choledochus into the inteſtines, and is evacuated by purging; ſometimes the abſceſs burſts into the ſtomach, or the matter is diſcharged by vomiting; or the abſceſs burſts into the cavity of the abdomen.

Perſons who have ſuffered one attack of this kind are generally ſubject to returns, which ſometimes terminate fatally in a hepatic hectic.

The moſt remarkable circumſtance in the preceding caſe, and as ſuch chiefly claiming our notice, is the matter of the abſceſs having made its way through the diaphragm into the lungs, and having been evacuated by expectoration, or through the trachea.

Of this, I believe, there are few examples; and it can indeed only happen when the abſceſs is formed in that portion of the liver which is contiguous to the diaphragm, or when an adheſion had previouſly taken place in conſequence of inflammation or tubercle.

The preceding caſe affords an example of the following very remarkable, and, I believe, very unuſual facts.

1ſt, That the matter of an abſceſs in the liver, ſometimes makes its way through the diaphragm into the air veſſels of the lungs, and does not prove immediately fatal.

2dly, It is obvious, from the quantity of bile expectorated, and clay colour of the ſtools, that all the branches of the hepatic duct communicated directly or indirectly with the abſceſs; while, at the ſame time, there exiſted ſome cauſe, which had, on many occaſions, though not conſtantly, prevented the bile from paſſing downwards into the duodenum.

3dly, The bile being diſcharged by expectoration, explains the cauſe why this patient had not jaundice.

The purulent matter found within abſceſſes of the liver is commonly extremely viſcid, reſembling purulent mucus, which explains the appearance of the matter expectorated; beſides, as this was diſcharged through the trachea, it was neceſſarily mixed with more or leſs mucus in its paſſage. In the treatment of this diſorder, little more can be done than to endeavour to palliate the moſt urgent ſymptoms.

Small doſes of calomel were preſcribed, partly with a view to its ſtimulant effects upon the inteſtines, partly with a view to its deobſtruent property; as, perhaps, by ſuch a medicine, any tumor or induration in the ſubſtance of the liver, or neighbouring parts, which prevented the free flow of bile through the ſmaller biliary ducts, or ductus communis choledochus, might have been removed.

It ſeems to me not improbable, that the ſpreading of the ulceration through the ſubſtance of the liver might have been the cauſe of the patient's relapſe, and eſpecially as the diſeaſe returned, upon his being expoſed to thoſe cauſes which originally induced the diſorder, or from taking ſuch articles of food or drink as are well known to aggravate or renew it, eſpecially in thoſe who, at any period of their lives, have had hepatitis.

Although, from the appearance of the fluid expectorated, there could be little doubt of its containing bile, I was deſirous of having the fact aſcertained by chemical analyſis, and, with that view, ſent a quantity of it, without mentioning its origin, to Dr Duncan, jun., from whom I received the following account of ſome experiments to which he ſubjected it.

" The fluid which you ſent me for analyſis was not homogeneous, but conſiſted of ſmall white particles, fibres, and a few larger maſſes like cartilage, which has been long macerated, enveloped in a glairy fluid of a yellow colour, as if tinged with bile. Its ſmell was unpleaſant, and ſomewhat ſweet, like that of honey. It was the moſt glairy fluid I ever ſaw, not excepting the white of egg. On attempting to lift a portion of it in a ſpoon, the whole was drawn back into the baſon, by its coheſion with what remained; and it was with the greateſt difficulty that a little of it could be poured out of a proper veſſel. I endeavoured to ſeparate the ſolid particles from the fluid by means of filtration; but, even after it was well beaten with water, to deſtroy its tenacity, it did not paſs through a paper filter.

" When perfectly recent, it did not change the colour either of turmeric or litmus, but, in a very few hours, it reddened the latter;

ter; and in this ſtate were my experiments performed upon it. When kept for a length of time, it gradually ſeparated into a tranſparent brown fluid, and yellow opaque ſediment, and became very ſlowly, but, at laſt, highly putrid; and, in conſequence of theſe changes, loſt its remarkable glairineſs.

"Its reſemblance to white of egg induced me to ſuppoſe that it conſiſted chiefly of albumen; but I was miſtaken, for it did not coagulate on being heated to ebullition. It, however, underwent ſome change, for its remarkable coheſiveneſs was completely deſtroyed. Neither did it conſiſt chiefly of gelatine; for, on being conſiderably evaporated, and allowed to cool, it did not gelatinize. During the evaporation, a brown pellicle formed on its ſurface, reſembling thoſe which form on ſolutions of extractive, when expoſed to the action of heat and air. When evaporated to dryneſs, it formed a yellow ſemitranſparent maſs, ſomewhat deliqueſcent.

"It was difficultly diffuſible through cold water, by agitation, but more readily through boiling water. It did not, however, form a perfect ſolution, but remained milky, with a little flocculent ſediment.

"Sulphuric, nitrous, and muriatic acids firſt coagulated it, the coagulation paſſing ſucceſſively from a bright yellow through a ſeries of colours, green, blue, and purple, and then diſſolved it into a yellow or green turbid fluid. During the action of ſulphuric acid, a pungent ſmell, reſembling acetic acid, was diſtinctly perceived. Theſe acid ſolutions were decompoſed by water and alkaline ſolutions; and the precipitate in both caſes was rediſſolved by adding alkali in exceſs.

"Diluted nitrous acid, acetic, oxalic, and oxymuriatic acids coagulated it without rediſſolving the coagulum, which was, however, ſoluble by exceſs of alkalies.

"Solutions of alkalies, and of alkaline carbonates, readily diſſolved it into a ſlightly turbid yellow fluid, which was decompoſed by acids.

"With ſolutions of acetite of lead, nitrate of lead, muriate of tin, nitrate of mercury, muriate of mercury, ſulphate of zinc, ſulphate of copper, and nitrate of ſilver, it formed coagulum, more or leſs conſiſtent, and of various ſhades of yellow or green.

"With infuſion of galls it formed a white coagulum.

"When diffuſed through a large proportion of water, the filtered ſolution was precipitated by infuſion of galls, and all the acids; had its colour heightened, and tranſparency increaſed, by the alkalies, and alkaline carbonates; was not precipitated by muriate of mercury, or ſulphate of zinc; was ſlightly precipitated by alcohol, acetite of lead, nitrate of lead, ſulphate of copper, and muriate of tin, and very copiouſly by nitrate of mercury.

"It was converted into a white ropy coagulum by alcohol, which acquired from it a yellow colour.

"The tincture loſt its tranſparency when mixed with water; had its colour heightened by potaſh and ammonia; was precipitated by barytic water, and very ſlightly by tincture of galls. With ſulphuric and muriatic acids it formed a turbid green fluid; with nitrous acid, a reddiſh orange fluid; and with oxalic and oxymuriatic acids, a turbid, whitiſh, grey fluid. With muriate of mercury, acetite of lead, muriate of tin, and ſulphate of zinc, it formed a white, and with nitrate of lead, and ſulphate of copper, a green or blue precipitate. With nitrate of mercury it formed a very copious white, curdy precipitate.

"Water, in which the coagulum of the tincture was agitated, ſhowed ſlight indications of animal matter, by forming precipitates with tannis, acids, and metallic ſolutions.

"From theſe experiments, I think we may conclude that the yellow colour of the fluid was owing to the preſence of the reſin of bile, as I know of no other ſubſtance which undergoes ſimilar changes of colour by the action of acids, and other reagents. But with regard to the nature of the principal maſs of the fluid, I am not ſo certain; and, unfortunately, I had not an opportunity to repeat my experiments after I had read Dr Boſtock's paper in the laſt Number of this Journal. That it did not principally conſiſt of albumen, was evident from its not coagulating by heat, and from no precipitate being formed in it when diſſolved in water and filtered by muriate of mercury. That it did not principally conſiſt of gelatine, was alſo evident, from its not being precipitated by the alkaline carbonates, from its being powerfully coagulated by moſt metallic ſolutions, and from its not gelatinizing on evaporation and cooling. That it did not conſiſt principally of pus, was evident from its phyſical properties, its ſemitranſparency, and remarkable coheſiveneſs. It differed from mucus chiefly in being precipitated by infuſion of galls; but as this may have been owing to the admixture of gelatine, I am inclined to think that it conſiſted principally of mucus, which is ſometimes ſecreted in very large quantities, and very ropy, as in cyſtirrhœa, and ſome varieties of diarrhœa."

II.

II.

Account of a peculiar Structure of the Membrane lining the Urethra, and of two ſuppoſed Hermaphrodites. By John Barclay, M. D. Lecturer on Anatomy.

Laying open the urethra of a man from the ſide of the corpora cavernoſa penis, and obſerving the orifices of two lacunæ, which ſtruck me as ſomewhat larger than ordinary, I applied the point of a blow-pipe to one, to ſee how far it would admit the air. On impelling the air with a ſlight degree of force, it entered the cells of the thin membrane lining the corpus ſpongioſum urethræ, and exhibited theſe cells as a kind of irregular veſſels or canals. To preſerve the appearance which had thus been produced, I withdrew the blow-pipe and injected mercury, and obſerved diſtinctly, that though many of the cells communicated laterally, yet none of the injection flowed out through the cut margin of the urethral membrane, nor entered the cells of the corpus ſpongioſum, nor any of the venous or arterial veſſels; that the cells, however, muſt have opened laterally into the cut edges of the membrane is evident; and the eſcape of the mercury through its lateral paſſages was in all probability prevented only by the retraction of the membrane itſelf. As the injection in this inſtance, however, furniſhed no proof of a communication, where certainly a communication exiſted, I was not authoriſed to deny a connexion between theſe cells and thoſe of the corpus ſpongioſum urethræ, and more eſpecially when I recollected that the communication between veins and arteries at their extremities cannot always be demonſtrated, even by the minuteſt injections. The ſucceſs of injections depends upon a variety of circumſtances; and we proceed on a raſh hypotheſis when we imagine that our injections flow in the dead as freely and minutely as the different fluids in the living body. Immediately after the death of a dog, I have often injected the lymphatics of the cord from the ſpermatic artery without any appearance of rupture that I could perceive: on plunging a dog into warm water as ſoon as he was killed, I have likewiſe ſucceeded in throwing even a coarſe injection from the arteries into the veins; and have ſtill a preparation of a Sapajous ape, killed and injected in ſimilar circumſtances, where all the veins of the ſacral extremities, many of the pelvis, and the vena cava, to the place where it receives the emulgents, were completely filled from throwing the injection ſacrad into a part of the abdominal aorta.

In theſe inſtances, the event, were I to reaſon from experience, would have been different had I allowed the animals to cool, and tried the injection a day or two after.

But although the injection in the caſe of the urethra neither flowed through the edges of the membrane nor into the cells of the corpus ſpongioſum, it flowed freely through the orifice of a lacuna, near the proximal extremity of the penis. Into this lacuna I likewiſe introduced the injecting pipe, but could not make the mercury flow with the ſame eaſe from the proximal to the diſtal as I had done from the diſtal to the proximal extremity: this ſeemed to imply, that in the communication between the cells there was ſomething that performed an office reſembling that of valves, though the difference of appearance, and the ſize of the lacunæ by which they opened at both extremities into the urethra, prevented me from concluding that they were lymphatics, in either a natural or diſeaſed ſtate.

The preparation, which I preſerve, is conſiderably disfigured from drying, and from the eſcape of the mercury; but the drawing, which was done by Mr Anthony Stewart, an ingenious artiſt, repreſents the appearance with great accuracy.

A, *a*, are the two lacunæ at the diſtal extremity: *a*, the lacuna by which the mercury was firſt thrown into the cells: *c*, the lacuna by which it flowed out at the proximal extremity, and which was afterwards ſecured by a ligature: *b*, marks the place where one of the cells was ruptured, and which was likewiſe ſecured by a ligature: *d*, *d*, *d*, *d*, are the cut edges of the corpora cavernoſa penis; the cut edges of the corpus ſpongioſum urethræ could not be diſtinguiſhed from them, or had receded behind the membrane,

I have repeated the experiment on ſeveral other urethræ ſince, and have often failed. Where I ſucceeded, I have found the canals conſiderably different in different individuals; and been led to conclude that this difference in ſtructure, whether original or contracted by diſeaſe, has contributed not a little, with a difference of conſtitution, &c. to vary the nature of ſtrictures and gonorrhœas, as well as the effects which reſult from the introduction of bougies.

The other facts which I have to mention, relating to the unuſual ſtructure of the urinary organs, were what I obſerved in a lamb and a pig: theſe animals were ſent to me as complete hermaphrodites, and therefore ſuppoſed to be great curioſities. On examination, I found they were both males. The urethra of the lamb terminated in the perinæum, by an orifice ſomewhat ſimilar to that of the female, and beyond this orifice the penis was imperforated. The urethra of the pig likewiſe terminated in the ſame

PLATE IV. Page 404

Fig. 1.

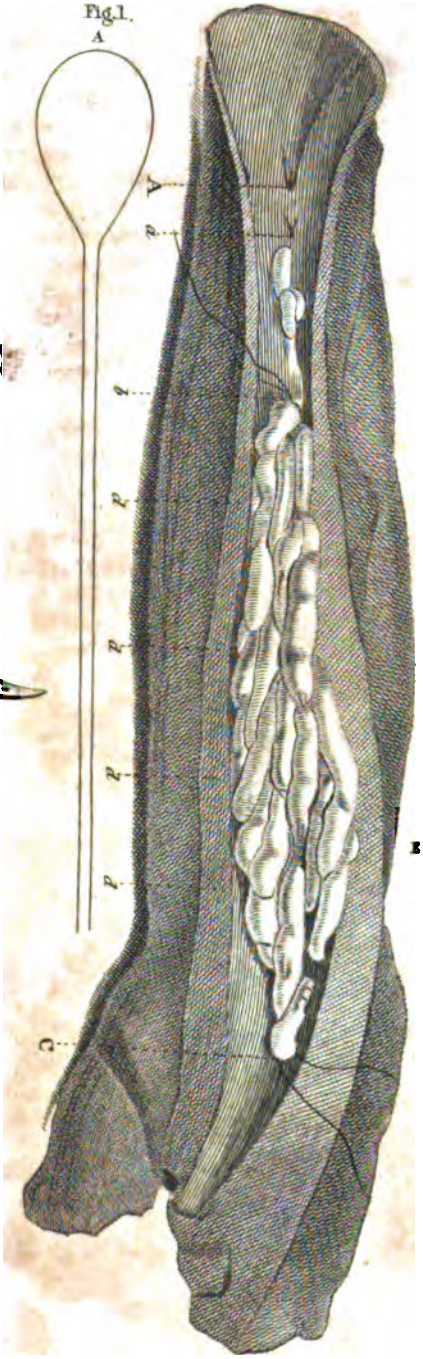


Fig. 2.

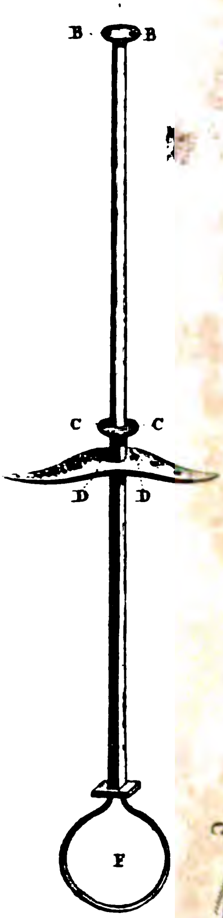
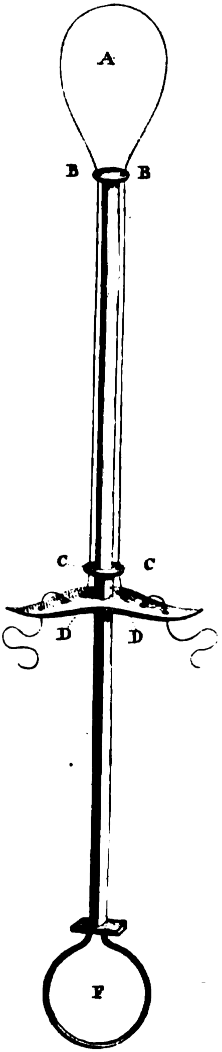


Fig. 3.



Engraved for the Edinburgh Medical Journal No. 4

ſame place, and in the ſame manner; but there was no penis. The teſtes were only partially in the ſcrotum; and the vaſa deferentia, of the uſual ſize where they left the teſtis, gradually tapering as they reached the pelvis, became at laſt as ſmall as a hair, and, approaching one another, totally diſappeared on the dorſal aſpect of the urinary bladder, in the doubling of a thin tranſparent membrane, which was evidently a fold of the peritonæum, extending dextrad and ſiniſtrad, like the ligamentum latum uteri, repreſenting the form, and occupying preciſely its ſituation, but not connected with any kind of organ reſembling an uterus, ovaria, fallopian tubes, or ligamenta rotunda.

Edinburgh, 8*th July* 1805.

III.

Caſe of a Bony Tumour, ſucceſsfully extracted from the Orbit of the Eye. By Thomas Lucas, Surgeon, Stirling.

A. D. a farmer's daughter, 28 years of age.

1*ſt October* 1802. Covered with the upper eye-lid of the left eye, there is a very hard tumour, of an oval form, and rather flat, ſomewhat more than an inch in its perpendicular diameter, and extending horizontally, about an inch and a half in length, from the inner angle of the orbit towards the eye-ball, which is diſplaced. It ſeems to occupy the greater part of the ſocket, and has forced the eye itſelf forwards and outwards, ſo that the eye hangs pendulous and looſe, and apparently entirely beyond the exterior edge of the outer angle of the orbit. The optic nerve and muſcles muſt be conſiderably elongated, perhaps nearly an inch. She can ſtill, however, diſcover objects with this eye, although its ſight is much impaired; and ſhe complains of little pain from the tumour, even when preſſed or handled pretty freely.

On the 25th of February, ſhe had received a blow from a cow's horn on the upper and inner angle of the orbit of the left eye, nearly on the tranſverſe ſuture; but, as it inflicted no wound, and the pain ſoon ſubſided, it was conſidered merely as a ſlight contuſion, and little attention was paid to it. About the beginning of March, however, there was diſcovered, on the ſpot where the blow had been received, a ſmall hard tumour, which increaſed gradually to its preſent ſize, but with very little pain, and no interruption to her general ſtate of health, ſo that ſhe continued her uſual laborious employments about her father's houſe. She has conſulted ſeveral gentlemen of the faculty in Glaſgow, and in other parts of the country, who gave her no ſatisfaction concerning the nature of the tumour, and declined attempting any thing for her relief.

2d October. Being certain that the examination would be attended with no danger, but might be productive of good conſequences, I reſolved to aſcertain the nature of the tumour, which, although hard, appeared ſomewhat looſe. With this view, I made a horizontal inciſion through the upper eye-lid, about an inch in length, along the greateſt diameter of the tumour, which, on ſeparating, and raiſing the edges of the wound, was diſcovered to be a ſolid piece of bone, covered only with the common integuments, and a thin membrane ſomewhat reſembling perioſteum, and to which it was but ſlightly attached. No part of the bones of the orbit was denuded; and although the manner of its adheſion to the neighbouring parts could not be aſcertained, the tumour remained firm and immoveable, notwithſtanding conſiderable efforts were made to looſen it, and bring it away.

The wound made by the inciſion did not heal up, but continued nearly of its original ſize, diſcharging a ſmall quantity of thin matter, neither purulent nor fetid. The bone continued to increaſe in ſize; the eye was ſtill more preſſed out of its natural poſition, though ſome degree of ſight ſtill remained in it, and the girl continued in perfect health. At length, towards the end of September 1803, the bone becoming carious, and evidently looſe, and protruding ſomewhat forwards, I endeavoured to extract it by making, with a ſmall ſcalpel, an inciſion round the edges of the former wound, to detach it from any adheſion at its orifice, and by taking firm hold of it with a pair of ſtrong forceps. The firſt attempt failed, but a ſecond, made ſome days afterwards, ſucceeded; and I extracted, without much exertion or difficulty, a piece of bone, of an oblong ſhape, weighing an ounce and two drachms; an inch and a half in length, and two inches five eighths in circumference; hard, ſolid, and pretty ſmooth.

The extraction of the bone was followed by no hemorrhagy; a few drops of blood only were diſcharged from the edges of the wound. The cavity from which it was extracted was found to be lined with a ſtrong membrane, quite ſmooth on the upper and inner ſides, but ſomewhat uneven on the ſide next the ball of the eye. No perforation or communication with any of the ſurrounding parts could be diſcovered in it: when examined both with a probe and the finger, little irritation or pain was produced, and the bone had evidently no connexion or adheſion with any bone adjoining to it.

The lips of the wound ſoon healed, but could not be got to cicatrize, and its ſize is diminiſhed to about half an inch in diameter; but the cavity ſtill extends in a ſtraight direction backwards to two inches in depth. A little lint and bit of ſilk are worn over it to hide the deformity, and every time the dreſſing is removed the inſide of the cavity is covered with a ſlight exudation. The eye-ball has in a great meaſure recovered its natural ſituation, and ſeems ſtill to encroach on the cavity which contained the bone, although for ſome months paſt its progreſs has been but ſmall. She has completely recovered the ſight of the left eye, which is now equal to that of the right, and is ſcarcely more affected by fire or candle light, or by looking ſteadfaſtly at any object; the only perceptible difference being, that it begins to water firſt. She has no headach or any material complaint; has married ſince the bone was extracted, and is now the mother of a fine child, which ſhe nurſes herſelf.

March 4, 1805.

IV.

Analyſis of the Bone extracted in the preceding Caſe. By ANDREW DUNCAN, jun. M.D.

THE accurate analyſis of morbid ſtructures and ſecretions is always intereſting, as tending to increaſe our knowledge of the animal functions connected with their formation. It often enables us to correct the concluſions concerning their nature, which we are apt to deduce from the conſideration of their external characters alone: thus the chalk ſtones of gouty people, long conſidered as carbonate or phoſphate of lime, we now know to be urate of ſoda; and urinary calculi are now aſcertained to be exceedingly diverſified in their compoſition. However much, therefore, any morbid ſecretion may reſemble a ſubſtance whoſe compoſition is known, we are not entitled to conſider it as the ſame, unleſs our conjecture be confirmed by chemical analyſis. It is uſual for anatomiſts to talk of oſſification of the heart and arteries, of the converſion of ſoft parts into bone; but, ſo far as I know, their aſſertions reſt entirely on ſimilarity of appearance. I was therefore anxious to embrace the preſent opportunity of aſcertaining the fact; and on intimating my deſire to Mr Lucas, he, with the greateſt liberality, ſent me the bone for that purpoſe.

Its ſhape was extremely irregular, but ſomewhat reſembled a wedge cut out of a ſphere. Its longeſt diameter *a b*, forming the ſharp edge of the wedge, was two inches in length; the greateſt length of the ſides was one inch $\frac{4}{10}$; the greateſt breadth of its convex back, *d f*, was one inch $\frac{1}{10}$. The back of the wedge, although extremely irregular and ſtudded with proceſſes, was in general ſmooth and poliſhed; but in ſome parts, eſpecially where it was dermal, it had a curious appearance. The ſides were much leſs uneven, but in no part had a ſmooth or poliſhed ſurface, and reſembled thoſe parts of bone to which cartilage, ligament, or membrane is firmly attached, being full of ſmall pits or depreſſions, and rough, as if corroded by the action of a cauſtic fluid. In no part, after the moſt careful examination, did it ſhew any appearance of fracture, and therefore could not have been an exſtorſis. The poſition of the bone in the orbit, may be thus deſcribed in Dr Barclay's preciſe and well contrived anatomical language. Part *a d*, of the convex back of the wedge, had a meſial aſpect; the remaining part *d b* was dermal, and covered with the upper eye-lid; the irregular edge of the wedge *a e b* had a ſiniſtrolateral aſpect, and reſted upon the diſplaced eye-ball, and the ſides of the wedge were concave, the one had an inial, and the other, which is repreſented in the engraving *a c b e*, had a glabellar aſpect.

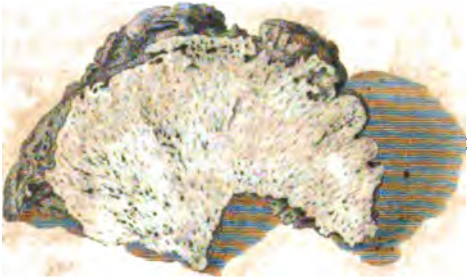
Its weight (on the 18th April 1805) was 387 grains; the diminution being undoubtedly owing to perfect exſiccation, eſpecially of ſome blood and ſoft matter which ſtill adhered to it. Its ſpecific gravity was 2, being almoſt exactly the ſame with that of a dried portion of the human femur after all the cancelli were removed. Its colour was yellowiſh white; its ſaw-duſt was ſnow-white. It was extremely hard, and its hardneſs, to uſe the expreſſion of the mechanic who cut it, was ſharper, while that of the femur was tougher. When cut, its internal texture was found to be nearly uniform, ſomewhat like that of ivory, being very ſlightly marked with the appearance of radii extending from the middle of the edge to the convex back of the wedge. It admitted of being poliſhed like ivory.

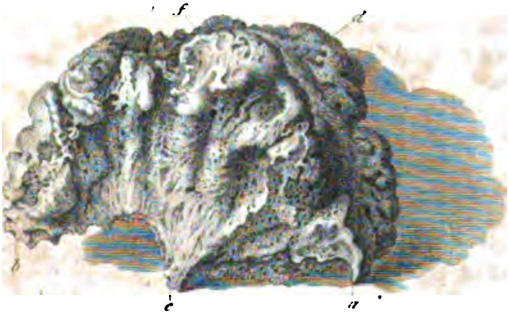
Its ſaw-duſt was boiled in diſtilled water. The decoction formed a copious precipitate with infuſion of galls, a very ſlight precipitate with acetite of lead, and was not changed by muriate of mercury (corroſive ſublimate). The water had therefore extracted a notable proportion of gelatine.

When immerſed in diluted muriatic acid, there was at firſt conſiderable effervеſcence, which gradually decreaſed. In proportion

Plate 5th Page

Mr LUCAS'S CASE.





J. Stewart del. et sculpt.

Engraved for the Edinburgh Med. Journal No. 4

portion as the ſolution advanced, the remaining bone acquired a pink hue; and when the action of the acid had completely ceaſed, there remained a red cartilage, retaining the form of the fragment of bone operated on, exhibiting no particular ſtructure, and having a certain degree of firmneſs. On being dried, it ſhrunk very much in ſize, and was converted into a ſemitranſparent brown horny-like ſubſtance. The muriatic ſolution gave a copious white precipitate with water of ammonia, and afterwards a ſlight precipitate, alſo white, with a ſolution of carbonate of ammonia. A piece of well-dried femur, treated in the ſame manner, exhibited nearly the ſame phenomena. The principal difference was in the appearance of the cartilage, which was evidently leſs in quantity, and much leſs firm in conſiſtence. This analyſis gave the following proportions:

	Femur.	*Præternat. Oſſification.*
Cartilage, - - - - -	4. 6	7. 8
Phoſphate of lime, -	87. 5	82. 4
Carbonate of lime, -	7. 9	9. 8
	100.	100.

It is perhaps neceſſary to mention a ſource of inaccuracy in this analyſis, that others engaged in ſimilar inquiries may avoid it. The precipitated phoſphate of lime, on being dried, did not become opaque and white, like chalk, which it always does when pure, but aſſumed a ſemitranſparent horny appearance, indicating the preſence of a certain proportion of animal matter, which had been diſſolved in conſequence of the muriatic acid not having been ſufficiently diluted, and the ſolution phials having been accidentally expoſed to the heat of the ſun during ſome very hot weather. At the time, the action of the acid on the animal matter was indicated by the ſolution, which till then had been colourleſs, acquiring a reddiſh tint. As this error, however, affected equally both analyſes and ſolutions, it appears that the ſubſtance extracted by Mr Lucas did not differ in compoſition from the piece of femur, more than what might have been expected, the one being an adult bone, the other formed in the ſpace of about nineteen months; and that, therefore, true bony matter may be formed in ſituations where it never occurs naturally, and by the action of veſſels which never ſecrete it in a ſtate of health.

V.

V.

Drawings, with the Deſcription of an Inſtrument for extracting Polypi from the Noſe. By WILLIAM ROBERTSON, one of the Surgeons to the Kelſo Diſpenſary.

WHEN an operation is the only reſource left to relieve the complaints of the diſtreſſed, the method of performing it with facility and leaſt pain, is of the greateſt importance to the ſufferer. I have therefore ſent you the drawings of an inſtrument which I have been in the habit of uſing for extracting the polypus from the noſe, for a number of years, with great ſucceſs.

Plate 1. Fig. 1.—Is a piece of harpſichord wire, bent into a proper form; it may be uſed either ſingle or double, and twiſted.

Fig. 2.—Repreſents the form of the inſtrument, which may be either of ſilver or ſteel; it ought to be about four inches in length altogether, quite round and ſmall, not much thicker than a common probe; as much is to be left projecting at the top, on each ſide, as to admit of two ſmall holes to be drilled exactly oppoſite to one another, with only the breadth of the ſhaft of the inſtrument betwixt them. It ſhould be poliſhed in the ſmootheſt manner; other two holes muſt be drilled oppoſite to one another in the bead marked C, which ought to be diſtant more than two inches from the top, in a direct line with the former holes marked B; the letter E marks a ſlider; the letters D D mark two ſmall holes drilled in it, correſponding with thoſe above B C; all betwixt the bead and the ring marked E, is a ſquare for the ſlider to run upon the foot; the inſtrument is ſcrewed or rivetted into the ring after the ſlider is put on.

Fig. 3.—Repreſents the inſtrument armed; one of the ends of the wire Fig. 1. to be put down the hole marked by the letter B, then carried through the hole in the bead marked C, from thence through that in the ſlider marked D, and paſſed through the different holes in the ſlider, ſo as to ſecure it from ſlipping during the time of the operation; the other end to be paſſed down from the top in the oppoſite ſide in the ſame way, leaving as much as to form the nooſe at the top marked A; and this may be enlarged or diminiſhed according to the ſize of the polypus or the noſtril it has to enter. I generally find an oblong form the beſt, taking great care to ſecure the ends of both wires by means of the holes in the ſlider. When the nooſe is formed, and the ſlider puſhed up cloſe to the bead, the inſtrument is then ready for the operation. The patient is to be placed in the ſunſhine, or in a clear light, deſiring him to force his breath though his noſtrils, which has the effect of puſhing the polypus down its full length; then taking the inſtrument in the right hand, holding it below the ſlider, ſo as to keep the ſlider cloſe to the bead; then running it flat-ways up the ala naſi, or ſeptum naſi, till the top of the inſtrument at the lower end of the nooſe touches the moſt depending part of the polypus; then puſh the top of the ſhaft up the oppoſite ſide as high as the root of the polypus; you now have it encloſed within the nooſe, keeping it ſteady in that ſituation; then taking hold of the ring at the end with the left hand, and pulling down the ſlider with the right, till it has a firm hold of the polypus, then bring all away at once; or, if it is thought more eligible, the ſlider may be drawn from time to time by tying it down to the ring, ſo as to cut through by degrees. But I have never ſeen any hæmorrhagy ariſing from pulling it away all at once, to give any alarm: if it is intended to be pulled away at once, a twiſted wire is the beſt, as it does not cut the polypus ſo readily, and is apter to pull it from the root.

I have been in the habit of uſing this, or an inſtrument in many reſpects ſimilar, for the ſpace of ten years, and during that time have extracted a good number, though often a complaint difficult and troubleſome to eradicate. Very few whom I have operated upon have had any return of the complaint. I generally inſpect the bottom of the noſtril by the aſſiſtance of the ſunſhine; and if there is any appearance of a root remaining, I paſs a piece of lunar cauſtic, fixed upon the end of a wire, up through a ſmall glaſs tube, and touch the part repeatedly; or throw up a weak ſolution of ſal ammoniac by means of a ſyringe, and confine it in the noſtril for a few minutes. Some I have extracted ſo large as to weigh three drams and a half; and, not above a fortnight ago, I extracted one which weighed two drams and five grains. The ſuperior advantage of theſe inſtruments over the forceps and double canula in common uſe, is their occupying ſuch a ſmall ſpace, ſince, when neatly made, the upper end ought not to equal twice the ſize of the end of a common probe, which is of the greateſt importance when applied to ſuch an irritable part as the membrane of the noſe.

VI.

VI.

Caſe of a Blue Girl, *with Diſſection.* Communicated by Alexander Marcet, M. D. one of the Phyſicians to Guy's Hoſpital.

TO THE EDITORS OF THE EDINBURGH MEDICAL JOURNAL.

GENTLEMEN,

During a courſe of clinical lectures at Guy's Hoſpital, laſt ſpring, I had the opportunity of noticing one of thoſe ſingular inſtances in which the ſkin, all over the ſurface of the body, becomes tinged of a purple colour, in conſequence of internal diſeaſe. The patient died, and the examination of the body offered ſome uncommon and unexpected appearances. One of the Editors of your Journal having heard of this caſe, expreſſed a wiſh that I ſhould ſend you an account of it; and this I have now the pleaſure of doing, more with a view to comply with his requeſt, than from an idea that it will be found ſufficiently intereſting for your valuable publication.

Eliza Mitchell, a girl 21 years old, of middle ſtature, and of a thin ſpare habit, was admitted as a clinical patient on the 3d of April laſt. She had been for ſome time before under the care of Dr Buxton, who favoured me, immediately on her admiſſion, with the following account of her complaints:

" Since her infancy ſhe has been ſubject, during the winter, to a little cough, and to ſome degree of dyſpnea, which, however, were never ſufficiently ſevere to hinder her from performing her work as a maid-ſervant; and, when moſt ſeverely affected, neither her face, nor any other part, were at all of a purple colour. In other reſpects, ſhe was free from complaint, till the preſent attack.

" Laſt Auguſt ſhe happened to get wet through, during the time of menſtruation. Previous to this, ſhe had had a ſlight degree of cough and dyſpnea; but afterwards ſhivering fits came on; her cough and ſhortneſs of breath became worſe, and were accompanied by conſiderable pain in her cheſt. Theſe ſymptoms were relieved by bliſters and other means. She continued her uſual employment till ſeven weeks ago, although her health gradually became worſe and worſe. The catamenia had not appeared till laſt Auguſt, nor have they appeared ſince.

" The principal complaints which ſhe now makes are, a wheezing cough, which occurs very frequently, but is not ſtrong, apparently from her wanting ſtrength to cough out; great ſhortneſs of breath, which is in ſome degree relieved when ſhe ſits up; very great proſtration of ſtrength; loſs of appetite. She does not expectorate much, nor does ſhe complain of pain in any part. Her hands and legs are œdematous. Her colour, in every part, is purple; but this is more peculiarly conſpicuous in the hands, the lower part of the legs, the feet, and face. Her mother ſays that the ſwelling and purple colour came on in one day, about ſeven weeks ago, and that ſhe had previouſly complained of no peculiar ſymptoms. She is very thirſty. Bowels open. She generally dozes almoſt the whole day, but is very reſtleſs at night. She can lye beſt on her back, when her head and body are raiſed. She can, however, alſo lye well on the right ſide, but ſcarcely at all on the left. Her legs feel cold, both to herſelf and to thoſe who touch them. The other parts of her body are of the uſual warmth. Pulſe 120, and appears regular; but it is extremely weak and ſmall, and is hardly perceptible at the wriſt. She has been under medical treatment, during the laſt ſeven weeks, without the leaſt benefit, and has now a ſore mouth, in conſequence of mercurials which have been given. "

Immediately at her admiſſion into the hoſpital, a bliſter was applied to the cheſt, and an attempt was made to promote the ſecretion of urine, and relieve her breathing, by various diuretics. The next day I made the following report.

" The colour is ſtill more conſpicuous than yeſterday, and in the hands particularly; it is ſuch as could ſcarcely be exceeded by any purple paint. It is, however, not near ſo intenſe on the trunk of the body. She lies on her back, with her head and body raiſed, and anſwers queſtions ſenſibly, though in a very faint voice; and any attempt to ſpeak ſeems to be a very painful exertion to her. Her breathing is extremely quick, but feeble; and the contractions and dilatations of her cheſt are ſcarcely perceivable. Her pulſe is not to be felt at either wriſt, and cannot be counted in any of the arteries. She ſays ſhe is perfectly free from pain, and complains only of exceſſive ſhortneſs of breath. The bliſter has riſen well, but ſhe has had no paſſage in her bowels ſince yeſterday, and has made but a ſmall quantity of urine. "

She died a few hours after this report. Soon after death, the blue colour of the body gradually diminiſhed, and the next day it had almoſt entirely diſappeared.

The body having been opened, and the diſſection carefully conducted by my colleague Mr Aſtley Cooper, we obſerved the following appearances, which were immediately recorded.

Abdomen.—About half a pint of water was found in the cavity of the abdomen.

The liver had been ſlightly inflamed, and had contracted morbid adheſions to the peritonæum.

The veſſels of the coats of the ſtomach and inteſtines were turgid with purple blood; but, in all other reſpects, the abdominal viſcera were ſound.

Thorax.—The pericardium contained about an ounce and a half of water.

The heart ſeemed ſomewhat enlarged, more completely filling the cavity of the pericardium than uſual. In both ſides it was turgid with blood of an extremely dark hue, and its coronary veſſels were diſtended with blood of the ſame colour.

There was no unnatural communication whatever between the cavities of the heart; and its valves were all in a perfect and natural ſtate.

The lungs adhered every where to the inner ſurface of the cheſt, to the diaphragm, and to the pleura covering the pericardium. Theſe adheſions were ſome of them of long ſtanding, others juſt forming; and theſe laſt were compoſed of large quantities of coagulable lymph, having the appearance and texture of jelly, and exhibiting ſigns of incipient organization.

The lungs ſeemed diſtended with an unuſual quantity of dark-coloured blood, but were free from tubercles, or any other appearance of diſeaſe: their ſubſtance ſeemed rather more compact than uſual, particularly in the left lobe; but ſtill it did not ſink in water.

The reſult of this diſſection having proved very different from that which was expected, I may perhaps be allowed to indulge in a few remarks on the ſubject. Inſtead of an organic diſeaſe in the heart, of which we had ſcarcely entertained any doubt, we found that organ ſound, and the ſymptoms appeared to have originated in a cauſe totally independent of this. They were evidently the conſequence of a proceſs of inflammation on the ſurface of the lungs, which had produced adheſions to a remarkable, and, I believe, very uncommon extent. Theſe adheſions were ſuch, indeed, as to have obliterated all appearance of cavity in the pleura: and this ſo greatly impeded the progreſs of reſpiration, that the whole of the circulating fluids had been gradually brought to the ſtate of venous blood, which produced the appearances above deſcribed.

It may not appear clearly at firſt, why adheſions of the lungs to the pleura and diaphragm ſhould prove ſuch an eſſential obſtacle to the reſpiration; ſince, whether there are ſuch morbid adheſions or not, the lungs muſt always follow the cheſt and diaphragm in their contractions and dilatations. But if it be conſidered that, in the mechaniſm of reſpiration, the lungs, in order to adapt themſelves to the ſhape of the cheſt, during its contractions and dilatations, muſt ſlide ſome way over the pleura, ſo that each point of the ſurface of the lungs, in their collapſed ſtate, muſt correſpond to a different point of the pleura in their ſtate of dilatation, it will eaſily be conceived how materially ſuch a general ſtate of adheſion muſt interfere with the proceſs of reſpiration. Indeed, as I have mentioned before, our patient, on the morning of her death, ſeemed hardly to breathe at all. In confirmation of this, it may be obſerved, that whenever partial adheſions take place in the lungs, there is always more or leſs difficulty of breathing; and it is generally found, after death, that the coagulable lymph, or matter of adheſion, has been ſtretched ſome way into a kind of membranous band, ſometimes to the extent of an inch, or perhaps more, by the efforts of the lungs to diſengage themſelves.

With regard to the purple colour of the ſkin, this caſe ſhows clearly that this phenomenon does by no means neceſſarily depend on a pervious ſtate of the foramen ovale, or an immediate communication between the two ſides of the heart; ſince, in the preſent inſtance, it aroſe ſimply from a deficiency in the pulmonary circulation. Indeed, there are ſeveral caſes on record, in which the foramen ovale was found open, in adults, without any blue colour of the ſkin, or even without any diſeaſe at all having reſulted from it. I have ſeen, in the hands of Mr Aſtley Cooper, a preparation made from the heart of Mitchell, a man who was lately executed for murder, in which the foramen ovale is evidently open, without the leaſt veſtige of laceration, and yet the man was apparently in perfect health before his execution. *

It cannot be denied, however, that, in a great number of caſes of *blue children*, the foramen ovale has been found pervious; and I could eaſily point out a number of references to caſes of this kind. But then it will be found that, in moſt ſuch caſes, other

organic

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* I think it appears pretty evident, from the peculiar valvular ſtructure of the foramen, that (ſuppoſing the heart to be in other reſpects perfect) the circumſtance of this foramen, or rather this oblique paſſage, being not entirely cloſed, would by no means imply that the blood muſt paſs from one ſide of the heart into the other, but that, on the contrary, the reſiſtance of the blood in the left ventricle would cloſe that paſſage during the contraction of the heart.

organic diſeaſes of the heart have been diſcovered, which concurred in producing thoſe morbid effects. The moſt common defect, I believe, is, that, beſides the foramen ovale being in ſome degree open, the aorta is found to ariſe from both ventricles; ſo that the blood thrown into the arteries by the contraction of the heart is partly venous and partly arterial. I have ſeen, at St Thomas's Hoſpital, a preparation illuſtrating this diſeaſe, which is perfectly clear and ſatisfactory.

It may be aſked, why, in hydrothorax, when the reſpiration and circulation are much impeded, the ſame blue colour is not produced? But the fact is, that it often actually takes place in ſome degree; and if it does not appear in a more conſpicuous manner, it is probably becauſe the action of the lungs makes up in quickneſs what they cannot perform in quantity; a compenſation which would have been much more difficult in the caſe which has given riſe to theſe remarks, and quite impoſſible in the other organic diſeaſes of the heart, to which I have juſt alluded.

With regard to the purple colour gradually diſappearing after death, it cannot, I think, be accounted for upon any other principle than from the muſcular action of the arteries continuing for ſome time after death, and forcing the blood towards the larger branches, which, being under the more immediate influence of the heart, do not enjoy a muſcular power proportional to that of the ſmaller ramifications.

VII.

Caſe of Strictures in the Urethra removed by the Cauſtic Bougie; with an Account of the Appearances on Diſſection 18 *Months afterwards.* By Richard Carmichael, Surgeon to St George's Diſpenſary, Dublin.

John Hacket, a farmer, about 40 years of age, applied at St George's Diſpenſary, in the year 1804, to have advice for ſtrictures in the urethra. He gave the following hiſtory of his complaint.—Eighteen years before, having had a violent gonorrhœa, the ſtream of his urine, ſome months afterwards, diminiſhed; and this laſt complaint becoming worſe, a complete retention frequently took place, particularly after laborious exerciſe, or taking ſpirituous liquors, to the exceſſive uſe of which he was addicted. For the two laſt years, theſe ſymptoms were aggravated to ſo great a degree, that the deſire of making water, which could only be expelled by drops, was unremitting, and the ſtraining ſo violent, that a prolapſus ani was frequently the conſequence.

Sinking under thoſe complaints, he came to Dublin for advice, and was admitted into the Lock Hoſpital in January 1803, where he received conſiderable relief from the uſe of bougies for nine weeks, when he was diſcharged.

But his complaints returning in the following May, he again applied for admiſſion, and remained in the hoſpital ſix weeks, during which time he received ſo much benefit from the common bougie, that he could paſs his urine with eaſe, and was diſcharged the hoſpital as cured. However, in a ſhort time after he had laid aſide the uſe of bougies, the difficulty of making water returned, and increaſed gradually to its former exceſs, when, on the 1ſt of February 1804, he applied at St George's Diſpenſary.

Finding that I could only introduce a bougie of the ſmalleſt ſize, and that there were three ſtrictures, one near three inches, another at about ſix and a half, and the third at ſeven inches and a half from the external orifice, I continued to apply the common bougie for three weeks; but not being able to dilate the paſſage, except at the firſt ſtricture, and it being impoſſible, on ſome days, even to introduce the ſmalleſt bougie, I determined on making a trial of thoſe recommended by Mr Home, notwithſtanding the prejudice that prevails againſt them.

February 21.—I began to uſe the cauſtic bougies on the ſtricture at ſix inches and a half from the orifice, and the application gave ſo little uneaſineſs, that I was induced to repeat it almoſt daily, till the 16th of March, when I diſcovered that this ſtricture was overcome, on trying a full-ſized bougie, which paſſed freely till it met the oppoſition of the third ſtricture; conſiderable pain, with ſwelling in the perinæum, followed, but diſappeared in the courſe of a week.

This laſt ſtricture, which, I ſuppoſe, was ſituated at the commencement of that part of the canal which paſſes over the proſtate gland, was totally removed by fourteen applications of the armed bougie; for, on the 13th of April, a full-ſized bougie paſſed into the bladder.

Severe pain and ſwelling of the perinæum ſucceeded, together with conſiderable difficulty in paſſing water; theſe complaints, at firſt alarming, were removed in leſs than a week, by the uſe of the warm bath, emollient injections, and ſimilar remedies. A bougie of the largeſt ſize could now be introduced without

difficulty,

difficulty, and he had never any return of theſe complaints for the remainder of his life, which, about eighteen months afterwards, he unfortunately loſt by a fever.

My inducement to make this caſe public, ariſes from the opportunity I had of inſpecting the ſtate of his urethra after his death, which happened on the 6th July 1805.

In preſence of Dr Toole, phyſician to St George's Diſpenſary and Fever Hoſpital, who recollected his caſe, and other medical gentlemen, I accurately examined the urethra, but could trace no veſtige of the ſtrictures, except a little roughneſs where the ſecond ſtricture had been ſituated, exactly behind the bulb. It was ſo trifling that, had we not been acquainted with his former complaints, we ſhould have taken no notice of it. The lining membrane of the urethra had been perfectly reſtored.

I ſhall make no comments on theſe ſatisfactory and unequivocal appearances of the urethra, which ſo forcibly indicate the ſuperiority of the cauſtic over the common bougie. But the diſrepute into which this mode of cure has fallen may be in a great meaſure accounted for, when we conſider that, like every other powerful remedy in medicine and ſurgery, it is liable to be abuſed by a timid, unſkilful, or ill-timed application. And, in the firſt place, I cannot approve of the timidity of the ſurgeon, who conceives it ſufficient merely to touch the ſtricture, and inſtantly withdraw the bougie. A little conſideration convinces us that this undecided conduct occaſions the nitrate of ſilver to act as a ſtimulus, and not as an eſcharotic; thus producing the very conſequences moſt to be apprehended, inflammation, obſtruction, and fiſtula.

In the preceding caſe, and in every other which has ſince occurred to me, I applied the armed bougie ſteadily to the ſtricture *for four or five minutes*, and never experienced any inconvenience from that mode of application; for the ſurface of the cauſtic is neceſſarily ſo ſmall, that if the period of the application were equally ſo, a ſufficient quantity for the purpoſe intended would never be diſſolved or brought to act upon the ſtricture.

But too bold a uſe of this bougie is as much, if not more, to be avoided; and the endeavour to force it through the paſſage of the urethra, when it happens to be affected with ſpaſmodic contractions, muſt produce incalculable miſchief. On thoſe contractions taking place, it ſhould be inſtantly withdrawn, leſt the cauſtic ſhould diſſolve on the ſound part of the urethra, which is far more ſuſceptible of inflammation than the diſeaſed parts, thoſe on diſſection being found of a hard, ligamentous, or cartilaginous nature.*

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* See Home on the Urethra, vol. II. p. 56. 61. 212. 371.

Conſiderable diſcrimination will be neceſſary in ſelecting a proper time for applying the cauſtic; as it ſhould be avoided when pain, inflammation, or ulceration, encompaſs the diſeaſed parts, and obſtruct the urine, while matter mixed with blood runs from the urethra. Theſe complaints are firſt to be removed by warm fomentations, and other remedies of a ſimilar nature, before bougies of any kind are to be uſed, but particularly the cauſtic; for, if employed during ſuch a ſtate of excitement, we need not be ſurpriſed that ſuch conſequences ſhould follow, as violent inflammation, mortification, and dangerous or fatal hæmorrhagies.

Without meaning to enter into any controverſy, or caſt any reflection on thoſe gentlemen with whom I may differ on the ſubject, I beg leave to expreſs my thorough conviction, that the cauſtic bougie will be found, on a ſkilful and impartial trial, a ſafe and efficient remedy, where every other has been in vain perſiſted in for years; and although the older ſurgeons endeavoured to apply cauſtic to ſtrictures, they were much better acquainted with its virtues, than with the means of bringing them into action; and I can ſcarcely expreſs how much I admire Mr Home's elegant invention of the conveyance of this powerful eſcharotic to the affected part, with which, ſimple as it may ſeem, the world has to regret it was not ſooner acquainted; but which, if humility like mine may venture to predict it, will be tried wherever the principles of its action are known, and efficacious wherever it is tried.

Cumberland Street, Dublin, Auguſt 1. 1805.

VIII.

Obſervations on the Cure of thoſe Unnatural Articulations which are ſometimes the Conſequence of Fractures in the Extremities; with Caſes. By Andrew Inglis, M. D. one of the Surgeons to the Royal Infirmary of Edinburgh.

It occaſionally happens, even under the beſt treatment, that the ends of fractured bones ſeem to have no diſpoſition to unite, but become ſmooth and round, and move readily upon each other, giving riſe to an unnatural, or what is called an artificial joint in the middle of the limb, which, of courſe, is rendered entirely uſeleſs. It is not my intention, at preſent, to inveſtigate the proceſs of nature in healing fractures by the formation of callus, or to examine in what reſpect her efforts are deficient in the caſes alluded to; but to give an account of the various methods which have been ſucceſsfully employed by myſelf or my colleagues to effect a cure in theſe unfavourable caſes.

When the ends of the fractured bone do not ride over each other, adheſion may ſometimes be produced by rubbing the fractured extremities ſtrongly and forcibly againſt each other, ſo as to excite in them a greater degree of action. In ſome caſes, however, of fractured femur, where the callus ſeemed to have been ſo indolent that a cure could not be effected by this very ſimple procedure, I have ſucceeded by means of preſſure. It was applied nearly in the manner recommended by Mr White of Mancheſter. A ſtrong caſe was made of ſaddle leather, lined with ſoft ſhamoy, and ſtuffed round the edges. It was ſhaped ſo as to fit the thigh exactly, and to reſt upon the condyles of the femur and patella below, and on the great trochanter and pubes above. When buckled on by means of ſtraps properly adjuſted, it cloſely embraced the whole thigh, ſo as to keep it extended, and to prevent the fractured ends of the femur from ſlipping from their proper ſituation, or riding over each other.

I was firſt induced to employ this contrivance in the caſe of a man who had been in the hoſpital nine weeks on account of a fractured thigh bone, which ſhewed no tendency to reunite, the ends of the bone moving freely on each other without crepitation. The caſe was buckled on, and the patient was deſired to uſe his limb as much as poſſible. After walking about the ward for three weeks, he went to the country with the caſe on his thigh; and ſome months afterwards, he returned on his feet to the hoſpital, with the caſe in his hand, to reſtore it, and to ſhew that by its means he had been completely cured.

The ſame treatment was employed with ſimilar ſucceſs in the caſe of Charles Charleſton, who was brought into the hoſpital on the 9th of April 1805, in conſequence of a wall having fallen upon him. On examination, his right thigh was found to be fractured, very much ſwelled, tenſe and painful, particularly on motion, or when touched; but there was no wound or diſcolouration of the integuments. It was placed in a relaxed poſition on a pillow, and leeches and warm fomentations were applied to it. On the 18th of May, he was ſtill unable to put his foot to the ground, or to walk without the aſſiſtance of crutches, as the bones had not reunited. A caſe was therefore fitted to his thigh, and he was deſired to make every uſe of his limb, ſupporting himſelf as little as poſſible on his crutches. In the courſe of five weeks, on the caſe being removed, the bones were found to be perfectly reunited.

In another caſe, and of a different kind, preſſure was applied, but in a different manner, and with a ſomewhat different intention, by my colleague Dr Brown. At my requeſt, he has been ſo obliging as to draw up the following account of it, which forms an important addition to the preſent ſeries of obſervations.

'On the 29th of November 1803, William Wilſon, aged 35, came under my care, at which time, the tibia of the left leg, about its middle, was ſo much bent as to form an angle of nearly 145 degrees; this angle projected towards the other leg, the foot being thrown outwards. At this prominency, the ends of the bone could be made to move on each other without crepitation, and without pain. Two pretty extenſive cicatrices were to be ſeen at the place, and a ſuperficial ulcer of inconſiderable extent.

'Theſe appearances were the conſequences of a compound fracture, produced by the wheel of a cart paſſing over the limb about five weeks before. The patient's general ſtate of health had been reſtored.

'On the 3d of December, the limb was laid, on the outſide, into a caſe made of tinplate, hollowed in form of a leg, and lined with a quilted cuſhion. A conſiderable degree of preſſure was then made by a roller over the prominent part of the limb, the ſore having been previouſly dreſſed, and covered by a thick compreſs.

'The bandage was ſuffered to remain till the 8th, when it was removed; the leg was much leſs bent; but as the preſſure had increaſed the ſize of the ſore, the roller was not again applied till the 16th, when the ulcer had put on a healing appearance. The roller being again applied, was ſuffered to remain for four or five days more; it was then removed, uneaſineſs having been occaſioned by it. In this way preſſure was applied, with occaſional interruptions, for about ſix weeks, when the ends of the bone were found to have united, and the limb, in a very great meaſure, to have regained its natural ſhape.

'I ſaw the patient ſome months afterwards; the union of the bones was firm, and he could walk without inconveniency. He told me he thought that he would ſoon be able to reſume his uſual employment, which was that of a ploughman. There was ſtill ſome ſuperficial ulceration at the part where the ſkin had been originally injured.'

But ſometimes the ends of the bones ride over each other ſo much that the fracture cannot be reduced, or there exiſts ſome other untoward circumſtance which prevents the ſucceſs of this ſimple and eaſy treatment. In theſe caſes we are forced to have recourſe to a painful, dangerous, and difficult operation, the converting the ſimple into a compound fracture, by cutting down upon the fracture, and ſawing off the end of the bone. In Boyer's lectures on the diſeaſes of bones, it appears that he performed this operation but once, and that unſucceſsfully; and he has confidently aſſerted, that it is practicable only in fractures of the femur and humerus.

'Si malgré ces ſoins, la mobilité des fragmens dans l'endroit de la fracture, annonce que leurs extrémités ne veulent pas ſe réunir, il reſte une reſſource dernière dans la réſection de ces extrémités, opération douloureuſe, ſanglante, et d'un ſuccès incertain, quoiqu'elle ait réuſſi dans un aſſez grand nombre des cas, pour qu'on ſoit fondé à l'entreprende. *Elle eſt impoſſible dans les fractures non conſolidées de la jambe et de l'avant-bras*, membres formés de deux os qu'il ſeroit difficile d'iſoler des chairs, et dans leſquels le nombre des artères et des nerfs ſeroit un obſtacle aux inciſions néceſſaires pour dégager les fragmens; elle n'eſt donc praticable que dans celles de la cuiſſe, mais ſurtout dans celles du bras.' *

It is with pleaſure, however, that I am able, in confirmation of Mr Whyte's experience, with which Citizen Boyer ſeems to be unacquainted, to contradict Mr Boyer's aſſertions, and to prove that the application of our art is not ſo limited as he has repreſented it, by recording cures performed under circumſtances in which he has declared them impracticable. The firſt was that of an unnatural joint in the fore arm, performed by my friend and colleague Dr Wardrop, with whoſe permiſſion I extract the caſe from the records.

'Margaret Adie, aged 20.—10*th December* 1802.—About four months ago, a load fell upon her left fore arm, by which both bones were broken tranſverſely. Although the parts were immediately placed in their natural ſituation, and proper ſplints and bandages applied, yet the bones have not reunited. The arm poſſeſſes a ſmall degree of rotatory motion, but ſhe cannot keep it extended. She complains of pain in the ulnar ſide, aggravated on motion and preſſure, and the ends of the fractured bones may be diſtinctly felt riding over each other.

'11.—The ends of the bones were this day ſtrongly rubbed againſt each other, to excite, if poſſible, a ſufficient degree of inflammation, and afterwards two ſplints and a bandage were applied.

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* Leçons du Cn. Boyer, ſur les Maladies des Os, redigée dans un Traité complet de ces Maladies, par Anth. Richerand, 2 vol. 8vo. Paris, 1803. Vol. I. p. 69.

‘ 26.—The treatment employed on the 11th having failed in producing the deſired effect, this day both bones were laid bare by a longitudinal inciſion over each, one on the ulnar, and the other on the radial ſide of the arm; the upper ends of the bones were ſawed off, and the under expoſed. It was now diſcovered, that the interpoſition of a piece of tendinous ſubſtance had hitherto prevented the reunion. After the ends were properly adjuſted, common dreſſing was applied, and the whole bandaged with two ſplints. No veſſels of any conſequence were cut during the operation; but it was ſucceeded by a conſiderable degree of pain.

‘ 27.—As the inner ſplint occaſioned ſome pain at the lower part, it was found neceſſary to remove and cut a ſmall piece from the end of it, which gave her conſiderable relief.

‘ In the courſe of about two months, ſhe was diſcharged perfectly cured. ’

A very inſtructive caſe of an unnatural joint in the leg fell under my own care. The patient died ſuddenly from a cauſe totally unconnected with his lameneſs; and the inſpection of the limb after death enabled us to aſcertain that the cure had been previouſly completed.

6th December 1804.—John Storey, aged 40, is unable to put his foot to the ground, or to walk without the aſſiſtance of crutches. On examining the leg, a little above the ancle joint, the anterior part of the tibia appears uneven, and admits of a conſiderable degree of motion from an unnatural joint. The fibula is quite firm, but there is a conſiderable depreſſion at the ſame place. This lameneſs, he ſays, was occaſioned by an oblique fracture of both the tibia and fibula, which happened to him about nine months ago. For ſix weeks after the accident, he was confined to bed, and cold applications and ſplints were applied to the leg; but the ends of the fractured tibia, which now ride over each other, never united.

Dec. 23.—Since he was admitted into the hoſpital, he has been affected with ſome pneumonic ſymptoms, which were removed by bloodletting, and the application of a bliſter to his breaſt. This day, after applying a tourniquet to the ham, a longitudinal inciſion, about five inches in length, was made upon the anterior part of the tibia; the cellular ſubſtance was then carefully removed by diſſection, and one portion of the ſuperior end of the broken tibia removed by the trepan, and another portion by means of a ſaw. No part of the inferior end could be removed, on account of the depth at which it lay. During the operation, there was conſiderable hæmorrhagy, but no veſſels were taken up. The wound was dreſſed with common dreſſing and a roller.

30*th December.*—After the operation, he had conſiderable fever; the wound at firſt looked foul; but now healthy looking granulations appear in the bottom of the wound. His leg is, however, conſiderably ſwelled, and his foot œdematous.

January 20.—The ſwelling of his leg has gradually diminiſhed, and the appearance of the ſore improved. There is an exuberance of callus from the wound, covered with healthy granulations, and his leg is much firmer.

January 28.—He is now able to put his foot to the ground, and to walk with the aſſiſtance of crutches.

February 26.—He continues to get more ſtrength in his leg, and to walk firmer; but he is at times affected with palpitations at the heart, dyſpnœa, and frequent ſhort cough, without expectoration. Pulſe 112, and at times intermittent. Belly regular.

Utatur Miſt. Mucil. urg. tuſſi, et ſumat Hauſt. Anod. hora ſomni.

March 1.—He was ſeized laſt night with violent palpitations and great dyſpnœa. Ten ounces of blood were taken from his arm, and he got an anodyne draught, with half a drachm of æther, which gave him no relief. His pulſe intermits every fifth ſtroke.

March 6.—His complaints had conſiderably abated; but this morning he died ſuddenly.

The body was afterwards inſpected. There was a conſiderable degree of congeſtion of blood in the lungs. In the pericardium about eight ounces of ſerous fluid were found. The heart and arch of the aorta were much enlarged. The ſemilunar valves were oſſified. The aorta, at ſome places, was almoſt cartilaginous, and its inner ſurface, as it emerges from the left ventricle, was covered with oſſific particles. The coronary and pulmonary veins were alſo much enlarged, and diſtended with blood. Theſe appearances were ſufficient to account for the ſudden death of our patient; but what particularly intereſted us was the ſtate of the leg, and we found that the fractured ends of the tibia and fibula were connected together ſo as to form one ſolid maſs of bone.

THE INQUIRER, No. III.

'*Is there any Certainty in Medical Science?*'

The uncertainty and inutility of phyſic is the favourite cant among men who are alive and hearty, among incurable patients, and among no ſmall part of the fraternity, who rejoice in having ſuch a convenient means of eſcape in their frequent approach to the halter. Is a medical practitioner *ipſo facto* a quack? or (what is ſeldom the caſe) will it be diſcovered, after inquiry, that profeſſional men are really better than they call themſelves? Let us examine the twofold grounds of impeachment brought againſt the moſt honourable faculty. We are unable to guard the body againſt the acceſſion of diſeaſe, and to deviſe proper means of cure for all thoſe which do exiſt. The prevention of diſeaſes, it muſt be recollected, is generally left to each individual, as far as his own perſon is concerned; he may be taught, by the ſame experience which teaches all phyſicians, what is likely to hurt or to benefit him: in ſpite, however, of his knowledge and of his ſelf-love, he chooſes often to run the hazard of future contingencies, rather than ſacrifice a momentary gratification; it is not, therefore, his domeſtic medicine that is in fault, but the accidental bent of his paſſions. He eats an hearty dinner, feaſts on certain fruits, and drinks particular wines, becauſe the whole flatters his palate; although he has never eaten ſo much, nor taſted ſuch fruit and wine, without ſuffering afterwards: '*Quæ nocuere ſequar, fugiam quæ profore credam;*' he is as ſure of the conſequences of thoſe ſenſual gratifications, as he muſt be of the ſcalding property of boiling water poured upon his hand or his foot. Hence the adage ſo true in itſelf, when the faculties are not diſordered and impaired by irregular habits or by diſeaſe, that *every man muſt be his own phyſician.* Diſeaſe, however, is brought on by inexperience, thoughtleſſneſs, and by various uncontroulable circumſtances; the mind becomes agitated and diſturbed, the patient thinks himſelf worſe than he really is, and he wants ſomebody whoſe appearance he conceives to be the precurſor of health and comfort. The phyſician becomes acquainted with the moſt prominent ſenſations of his patient; he feels his pulſe and his ſkin, looks at his tongue, and examines the expreſſion of his countenance. Not a word is ſaid reſpecting thoſe circumſtances which excluſively belong to this particular patient, by which he is diſtinguiſhed from all other men, in

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a ſtate of health as well as diſeaſe, which form what is generally called his conſtitution or his temperament. The poor patient is not to be blamed; he knows nothing about himſelf. The phyſician is equally blameleſs, for his time will not allow him to hear the whole natural hiſtory of his patient, even if it were in his power to collect from the latter the recollection of things to which he has perhaps never attended. In the mean time, the patient, who continues to ſuffer, accuſes his phyſician; the phyſician accuſes phyſic; and phyſic remains the only guiltleſs object among them. But this is not all. In a number of caſes, the train of ſymptoms referable to the general laws of the animal economy ſufficiently characterize the nature of the diſeaſe, and the proper indications of cure. Here, however, the peculiarities of intellect on the part of the practitioner, or whims on the part of the patient, or both combined, are again in the way of certainty in the practice of medicine. What is evident to a man of common obſervation, ſagacity, and experience, may be peculiarly obſcure to a practitioner of inferior capacity; what would be adequate to the removal of the complaint, if properly and firmly adhered to, may become inadequate, and even tend to aggravate its nature, when partially or wholly neglected by the patient. Can it then be wondered at, that people who, from ignorance and imprudence, exchange health for ſickneſs, are unable or unwilling to calculate the ſuperior advantages of the temporary inconvenience of medical treatment over the perilous chance of violent and unbridled actions, or the wretchedneſs ariſing from an habitual diſordered ſtate of the body? To particularize all the ſources of uncertainty to which the practice of phyſic is expoſed, would be endleſs: Let it ſuffice to ſay, that the art of medicine has for its object a moſt complicated, moſt fugitive ſet of phenomena; that, unlike other arts, in which the difficulty of the enterpriſe confines the number of artificers to a few individuals properly qualified, medicine has been deluged with a ſet of men, to whom ignorance has imparted impudence and boldneſs; who deal with doſes of mental ſtimuli as with chemicals and ſcruples; who inſpire at once hope, confidence, and faith; while others creep along ſlowly with pharmaceutical preparations, the very idea of which nauſeates many, and depreſſes all.

The influence of quackery ſpreads like contagion. Quacks have exiſted in all countries and in all ages; and it is not more aſtoniſhing to ſee one ſet of men attempting to cure moſt diſeaſes through the medium of thoſe things which act upon the mind, than to obſerve another adhering almoſt excluſively to the uſe of one or two favourite remedies. They both alike abuſe the flexibility of organic nature, by forcing it into one particular channel; and if they acquire practical ſkill in the management of diſeaſes, it is at the expence of the mother ſcience, from which they baniſh every thing like conſiſtency and order. Uncertainty can never be the true character of any part of natural hiſtory, when the ſtudy of that ſcience ſhall be properly conducted, and the prejudices which interrupt its courſe be removed. The art of medicine is founded on obſervation: Particular facts, cautiouſly obſerved and accurately recorded, muſt ever be found ſuſceptible of ſome degree of generalization; and whatever difficulties may be thrown in the way of the medical obſerver by the complex nature of man, the track of his reſearches ſtill remains the ſame; for the phenomenon of body and mind, taken ſeparately and in connexion with each other, are within the graſp of experience, and ſubject to the laws of inductive philoſophy.

For the ſake of illuſtration, lets us examine the treatment of common fever. The ſtrength is impaired, the appetite languiſhes, uneaſy and unuſual ſenſations are perceived in different parts of the body; the pulſe is quick, the ſkin hot; we know by experience theſe ſymptoms are often ſpeedily removed by an emetic, a briſk purgative, cold affuſion, copious dilution, ſweating remedies, ſtrong emotion of the mind, &c. An emetic or a purgative may effect the cure, without expelling any ſordes from the primæ viæ; a ſtrong anodyne, the ſudden application of cold water, or a violent moral affection, frequently coincide in producing the ſame effect: there muſt therefore be ſome mode of action common to all; and accordingly one is diſcovered, that of producing a ſtrong impreſſion on the ſenſibility of the ſyſtem. We call that impreſſion a *ſhock;* and we ſay that a ſhock frequently removes a febrile attack. Whoever objects to the word *ſhock*, as meaning nothing more than the mere expreſſion of a fact, as containing no explanation of the phenomena, muſt be totally unmindful of what is generally underſtood by the word *explanation.* One fact is explained by claſſing it along with other facts of the ſame nature; and ſince organic bodies are ſubjected to particular laws, it becomes neceſſary to form thoſe peculiar laws by induction. In the preſent inſtance, the curative means agree in one property,—in ſtrongly affecting the excitability of the ſyſtem; they agree alſo in removing the diſeaſe. The conſequence of that ſimple aſſociation is, that this ſtrong impreſſion, or this ſhock, is the cauſe of what follows,—the cure of fever. Farther obſervation may diſcover other ſubſtances which produce the ſame effect, without affecting the ſenſibility much; then, and then only, ſhall we be enabled to ſay that the above means remove the fever on a principle different from that at preſent alleged; this laſt then becoming ſubordinate to the other. Again, it is ſaid that emetics, cathartics, and diluents, are beneficial at the commencement of a fever, by expelling, or diluting irritating matters lodged in the primæ viæ. Theſe remedies have at leaſt that one property in common; and we are inſtinctively led to believe that their efficacy depends on that property. The application of cold water, the exhibition of diluents, ſudorifics, and purgatives, conſpire in producing one effect; they reduce the temperature of the body, and they ſucceed in removing the fever. It is therefore natural to infer that they cure the diſeaſe by cooling the body. We may even go ſo far as to aſſert, ſynthetically, that the ſoothing the irregular actions of the nervous ſyſtem, clearing the primæ viæ, and the reduction of the increaſed temperature, are the grand deſiderata in the treatment of fever; and thoſe remedies which unite moſt of theſe beneficial properties will be found moſt efficacious. Emetics and cathartics ſtand uppermoſt on the liſt, and in this reſpect experience confirms their theoretical ſuperiority.

Phthiſis pulmonalis may be taken, on the other hand, as an inſtance of thoſe diſeaſes, the cure of which is rendered difficult, and ſometimes impoſſible, by cauſes ſuſceptible of being explained, but not removed. Phthiſis pulmonalis is an ulceration of the parenchyma of the lungs, accompanied by hectic fever, and gradual undermining of the ſyſtem. All ulcerated ſurfaces are injured by expoſure to atmoſpheric air, by a local action of the parts too great for their degree of irritability, and by a cachectic ſtate of the body at large. In an ulcer of the extremities, or any other external part of the body, the acceſs of atmoſpheric air is excluded by dreſſings; the degree of local vaſcular action is leſſened by emollient, ſoothing applications, and by reſt; the whole ſyſtem is calmed, if neceſſary, by anodynes, and the ſtrength of the conſtitution is attempted to be kept up by nouriſhing diet, good air, and tonic medicines. If external ſupport be neceſſary to preſerve a ſort of equilibrium between the arterial and venous circulation, or to give firmneſs and compactneſs to the ſolids, bandages and a horizontal poſture are employed. We endeavour, in ſhort, to place the body in thoſe circumſtances, both general and local, which we know from experience to be moſt congenial to the healthy functions of the ſyſtem at large, and of each organ in particular, without attempting to inquire more minutely into the rationale of thoſe healthy proceſſes of nature neceſſary to accompliſh the end in view. Now it is equally true, however lamentable the fact may be, that our preſent dietetical and medical means are inadeqate, in the caſe of phthiſis pulmonalis, to fulfil the various indications of cure above ſtated; and the difficulty ariſes from the peculiar ſituation and functions of the heart. The lungs communicate with the atmoſpherical air, and the continuance of that communication is neceſſary for the ſupport of life; the deleterious influence of that elaſtic fluid, whatever it may be, which affects ulcerated ſurfaces ſo much, cannot be removed. The lungs receive, beſides their own alimentary blood, the whole maſs of circulating fluids; that function cannot be interrupted without the ſuſpenſion of life; therefore reſt is alſo out of the queſtion, although the action neceſſarily produced by that vital function be too much for the weak and irritable ſtate of the diſeaſed part, and increaſe its diſorganization. The various means which are propoſed to improve the general health, and which would be otherwiſe ſo adviſeable in phthiſis, tend to increaſe the momentum of circulation, and conſequently to augment the local actions which require to be diminiſhed: thus as much, probably more, is loſt on one ſide than is gained on the other.

Such is the unfortunate courſe of our practice in one of the moſt common and deſtructive diſeaſes of the age. We have ſketched the general outlines of the relations ſubſiſting between it and ſimilar affections ſeated in other parts of the body. But it is not neceſſary to enlarge farther on this point at preſent. The object of this inquiry is to call the minds of medical men, by means of ſober generalization, to that analytical method which prejudice and indolence have too long excluded from medical inveſtigations. Such ſtatements, when properly conducted, muſt appear as fair examples of induction as any of thoſe which are implicitly received by chemiſts and natural philoſophers, in their own departments.

The explanations offered may be deemed not ſufficiently minute, and we are ready to grant that the ſcience of medicine is not arrived at its ultimate degree of perfection; but our knowledge, ſo far as it goes, anſwers important and uſeful purpoſes in life. Let us only advance in the ſame track, and the futility of the common complaints will appear more and more. Medical practitioners, who get their daily bread by daily preſcriptions, muſt be true to themſelves, if they cannot always be ſo to their patients. A miſtake proceeding from ignorance or inattention ſhould ever be referred to its true cauſe, as that is the only way to correct the want of ſkill, and check the habit of inattention. But if, in order to ſave their reputation, they ſhut their own eyes, as well as thoſe of their patients, experience to them can be of no avail; running from one blunder into another, they diſcredit a profeſſion, the ſucceſs of which reſts in a great meaſure upon the reſpect and confidence paid to it; and they diſcourage men whoſe talents and exertions would be beneficial to the improvement of the art, and to the welfare of ſociety.

PART II.

CRITICAL ANALYSIS.

I.

Traité Pratique des Maladies des Yeux, par A. Scarpa, *traduit de l'Italien ſur le Manuſcrit ſous les Yeux de l'Auteur; et augmenté de Notes.* Par J. Leveillé. 2 Tom. 8vo. Paris. 1802.

WHILST many parts of ſurgical ſcience have made rapid progreſs towards improvement, in Great Britain, within the laſt twenty years, we have received few important additions to our catalogue of authors on the diſeaſes of the eyes. Indeed, this branch of ſurgery has, for a long time paſt, been more cultivated and more ably practiſed by the ſurgeons of the Continent, than by thoſe of our own country; and for the beſt practical works we have hitherto been indebted to France and Germany. The work before us ſhows how far, and to what degree of perfection, the Italian ſchool has advanced in its knowledge of this intereſting branch of medical ſcience; and if we examine it with a view to practical utility, it appears to us to be a model of that perfection which is only to be obtained from the long experience of an attentive and accurate obſerver.

After a ſhort introduction, in which the author mentions that he does not conſider this treatiſe as giving a complete view of all the diſeaſes of the eye, but only of thoſe which he has had an opportunity of obſerving moſt frequently, and with moſt attention, he treats of each in a ſeparate chapter, without attempting to arrange them in any ſyſtematic order.

In diſtributing the numerous diſeaſes of the eyes into particular claſſes, many authors have frequently conſidered mere ſymptoms as diſtinct diſeaſes, and have ſo multiplied names, that, inſtead of elucidating the ſubject, they have rather tended to miſlead and perplex. We therefore conſider it to be an advantage of the preſent work, that there is no attempt to enumerate a variety of complaints which are common to other organs of the body alike with the eye, and that the author confines his obſervations chiefly to thoſe diſeaſes which are peculiar to the eye as the organ of viſion.

The work is divided into twenty chapters; in which are conſidered Fiſtula lacrymalis; the Stye, or l'orgelet; Incyſted tumours of the eye-lids; Trichiaſis; Relaxation of the upper eyelid; Ectropion; Ophthalmia; Albugo; Leucoma and ſpeck; Ulcer of the cornea; Pterigion; Ecanthis; Hypopion; Hernia of the iris; Cataract; Artificial pupil; Staphyloma; Dropſy of the eye; Amauroſis; and Calculous concretions formed within the eye-ball.—From the variety of information given on theſe ſubjects, we ſhall extract what is moſt new and intereſting, and offer ſuch remarks as have occurred to us on a careful peruſal.

OF THE FISTULA LACRYMALIS.

Having ſhown the impropriety of the term Fiſtula lacrymalis in its common acceptation, and pointed out the different forms of the diſeaſe, Profeſſor Scarpa attempts to demonſtrate that this complaint does not begin in the lacrymal paſſages, but originates in a morbid ſecretion from the ſebaceous glands ſituated along the tarſi, and from the internal membrane of the palpebræ. He conceives that the morbid matter thus ſecreted is mixed with the tears, flows along with them into the lacrymal ſack, and, when in ſmall quantity, readily paſſes into the noſe. If, however, the morbid diſcharge increaſes, it does not paſs ſo readily into the noſe, but is detained in the ſack and duct, irritates them, and brings on inflammation; as the inflammation increaſes, the membranes lining the canals alſo ſecrete a quantity of matter, become thickened, and the fluid collected from theſe ſources diſtend the ſack, ſo that a tumour is formed externally, and the tears are prevented from paſſing freely into the noſe.

When the diſeaſe advances ſtill further, the external integuments give way, and the morbid matter and tears are either diſcharged from a fiſtulous opening, or flow over the eye-lid. Theſe obſervations lead our author to divide the diſeaſe into four different ſtages: The firſt is, when the morbid matter does not collect in ſuch quantities as to diſtend the ſack: The ſecond, when it diſtends the ſack ſo as to form an external tumour, and interrupt the flow of the tears: The third, when the ſack, after being diſtended, ulcerates externally, and forms what is properly called Fiſtula lacrymalis; and the fourth, when there is not only an external fiſtulous opening, but alſo a caries of the os unguis.

Theſe being ſeparately conſidered, and the mode of treatment pointed out, Prof. Scarpa draws the following general concluſions.

1. That it is impoſſible to obtain a perfect cure of this diſeaſe, whatever be the degree, the period, or complication, without, at the ſame time, correcting the diſeaſed ſecretion of the eye-lids by the application of topical remedies.

2. That, in the ſecond ſtage of the diſeaſe, attended with atony and ſenſible diſtenſion of the ſack, however completely the morbid ſecretion of the eye-lids be removed, and in whatever degree the action of the naſal canal be reſtored, the weeping is unavoidable, until, by the aid of an inciſion made its whole length, and by the application of eſcharotics and aſtringents to its internal ſurface, the ſack ſhall have recovered its natural capacity, ſo that the proportion in the ſize of that cavity correſponds to the calibre of the naſal canal.

3. That fiſtula lacrymalis, complicated with caries, eroſion, and perforation of the os unguis, and of that portion of the pituitary membrane lining the noſe, and alſo with an obliteration of the naſal canal, is ſuſceptible of cure, provided that the caries around the os unguis does not penetrate too far among the ethmoidal cells. In this caſe the weeping is not to be dreaded if the fungoſities in the interior of the ſack be deſtroyed, and ſuppuration be excited in the carious and perforated bone, and the interior parts of the ſack cicatrized and reſtored to their natural ſize.

4. That, in caſes of fiſtula lacrymalis, accompanied with denudation of the os unguis, and inſurmountable obſtruction of the naſal canal, where it is neceſſary to make a new paſſage for the tears from the ſack into the noſe, actual cautery is preferable to the ſimple application of the trocar; becauſe, without the deſtruction of that portion of the pituitary membrane which covers the os unguis, it is impoſſible to keep the new paſſage ſufficiently large, and conſtantly open.

5. That at the end of the treatment of the firſt, ſecond, and third ſtages of the diſeaſe, it is a very neceſſary precaution to obſerve, that the internal edges of the lacrymal ſack, which are already cicatrized, be not torn open; and that they are allowed to come together juſt at that period when we are well aſſured that the tears do not meet with any obſtruction either in paſſing through the natural canal, or by the artificial paſſage made by cauterizing the os unguis, and the correſponding portion of the pituitary membrane.

From ſuch caſes as we have had an opportunity of examining, both before and ſince we read theſe obſervations, it ſeems probable that a diſeaſe generally treated as fiſtula lacrymalis ariſes from a morbid ſecretion of the eye-lid; and, on the other hand, we have ſeen caſes where a purulent looking fluid was collected in the lacrymal ſack, and when it was even much diſtended and ulcerated, and yet no diſeaſe could be diſcovered in the eye-lids. It therefore appears to us, that however uſeful the obſervations of our author may be on this head, they ought to be kept within certain limits. If the palpebral membrane is diſeaſed, it can be readily aſcertained, as it is within the reach of our ſight; if there is no change to be obſerved in its ſtructure, we have every reaſon to believe that the diſeaſe is confined to the ſack itſelf, and we are thus enabled to lay down a rational mode of treatment, according to the ſeat and extent of the diſeaſe.

In thoſe advanced ſtages of the complaint, when there is a contraction of the naſal canal, our author does not ſeem to be acquainted with the mode of treatment by a ſilver ſtyle, propoſed ſome years ago by our ingenious countryman, Mr Ware; and it is very remarkable, that he takes little or no notice of a practice, often employed in this country, of introducing a metallic tube from the lacrymal ſack into the noſe, either through the naſal duct, or through a perforation in the os unguis. The favourable reports of both theſe modes of cure, and the happy iſſue of thoſe we have had an opportunity of ſeeing, would lead us, in moſt caſes, to prefer one of them to the more tedious, more difficult, and more painful mode of treatment adopted by our author.

In addition to theſe obſervations, the French tranſlator has ſtated, at conſiderable length, other diſeaſes of the lacrymal paſſages, which prevent the free paſſage of the tears into the cavity of the noſe. For theſe, which are neither new nor intereſting, we muſt refer our readers to the work itſelf, or rather to Boerhaave's treatiſe on the ſame ſubject, publiſhed 55 years ago.

OF THE STYE.

The ſtye, or l'orgelet, a ſpecies of tumour ſo frequent, and ſo liable to return in thoſe who have been once affected with it, is conſidered by Scarpa as a particular ſpecies of inflammation.

The diſeaſe commences in the ſkin, extends by degrees into the cellular membrane, and ſurrounds and deadens a part of it. The tumour becomes circumſcribed, and forms a hard painful ſwelling, which, although conſiderably elevated above the ſkin, contains only coagulated lymph, and the diſorganized mortified portion of the cellular membrane. It does not ſuppurate unleſs in a very imperfect manner; and when that happens, it does not take place in the centre of the tumour, but all round it. The ſkin generally ulcerates in one or more places; and there eſcapes through the opening, a ſmall quantity of ſerum, and, ſoon afterwards, the portion of mortified cellular membrane which formed the nucleus of the ſmall tumour.

Except at the very commencement of the diſeaſe, our author thinks it improper to attempt the cure by reſolution; but when the ſkin alone is affected, cold metal or ice applied to the apex of the tumour is the moſt uſeful remedy. When it has advanced ſo that the cellular membrane is affected, the beſt mode of treatment is the uſe of fomentations, and the application of emollient poultices.

With regard to the more indolent ſpecies of tumours which frequently grow on the eye-lids, extirpation is recommended as the only remedy; and as they are more commonly connected with, and adhere cloſer to the inner membrane than external ſkin, it is adviſed to remove them from the inſide of the eye-lid. This operation is not, however, neceſſary, unleſs the tumours grow ſo large as to become a deformity, impair viſion, or encircle important organs; for we have known more than one caſe, where ſuch tumours have diſappeared after remaining for many years; and alſo of caſes where they have undergone no change, and have been the ſource of little diſtreſs for a long time after their firſt formation.

OF TRICHIASIS, OR ENTROPION, ECTROPION, AND THE RELAXATION OF THE SUPERIOR EYE-LID.

The uſual mode of cure adopted by the older ſurgeons, when the tarſi were inverted, was to remove a portion of the ſkin of the eye-lid, and unite the edges of the wound ſo as to pull them into its natural ſituation.

Maitre Jan, and ſome of the modern ſurgeons, finding that this mode of cure was inſufficient, laid it aſide; but Scarpa refutes their opinion, ſhows the advantages that ariſe from it, and deſcribes the beſt mode of performing it. As to the operation itſelf, ſo much depends on the means which are employed to keep the tarſus in its new and natural poſition, and in retaining the lips of the wound in accurate contact until they adhere, that we think our author rejects, on too ſlight grounds, the uſe of ſutures, and truſts too much to the adheſive plaſter, which is very apt ſoon to become looſe, from the watering of the eye, and from the conſtant winking and motion produced by their irritation; whereas, if three or four ſtitches are made cloſe to the tarſus, and afterwards adheſive plaſters applied over the eye-lids, and extended over the cheek, ſo as to prevent the muſcles being thrown into action, the operation will have every chance of ſucceſs.

When the upper palpebra hangs down, ſo as to cover the eye, and obſtruct its viſion, the ſame kind of operation is recommended.

The ectropion was formerly ſuppoſed to ariſe from a diſeaſed contraction of the external integuments of the eye-lid, and not from any morbid affection of the internal palpebral membrane. Maitre Jan however remarked, that as, in this diſeaſe, the internal parts of the eye-lid were ſwelled, and ſecreted a morbid matter, our means of cure ought to be applied to it, inſtead of the uſual mode which is recommended, of dividing the external ſkin, and ſeparating the lips of the wound, ſo as to allow the eye-lids to fall into their natural ſituation.

Convinced of the truth of this obſervation, Scarpa recommends the application of eſcharotics and aſtringents to the diſeaſed internal membrane, or, if it has been much thickened and hardened, even to cut it out.

OF OPHTHALMIA, ALBUGO, LEUCOMA, AND ULCER OF THE CORNEA.

OUR author, in treating of ophthalmia, deſcribes two forms of the diſeaſe; the one of which he calls the acute, and the other the chronic ophthalmia. His deſcription contains many uſeful practical obſervations on this ſubject; and it is without doubt the moſt accurate relation of the phenomena of the diſeaſe we have ever met with. But when we come to examine particular caſes, and attempt to arrange them under either of theſe claſſes, the difficulty commences, and we find that our ingenious author has merely paved the way for the reſearch of future obſervers. In one caſe, for example, we obſerve that the patient complains of violent pain in the head and eye-ball; the ſecretion of tears is increaſed; the cornea remains tranſparent; few blood-veſſels are to be ſeen on the ſclerotica, and they are of a bright colour; there is intolerance of light, and general fever. In a ſecond caſe, beſides the ſymptoms of general fever, pain, &c. the adnata becomes ſwelled, red as a piece of ſcarlet cloth, and much reſembling the inner valvular ſurface of a ſmall inteſtine; the cornea remains quite tranſparent; and inſtead of the ſecretion of tears being increaſed, there is a copious diſcharge of a purulent looking fluid. In a third caſe, we obſerve the increaſed number of vaſcular trunks, and an obſcurity of the cornea. In a fourth, beſides numerous veſſels exhibiting a peculiar appearance in their diſtribution, there is a puſtule on the cornea or ſclerotica, which, if not removed by the application of medicines, advances to ulceration. In a fifth, the diſeaſe is confined entirely

tirely to the eye-lids and tarſi. Now, all theſe varieties of inflammation, and many others, occur frequently; and each of them requires a particular mode of treatment. It muſt therefore be of unqueſtionable importance to be able to diſcriminate theſe diſeaſes from each other, ſo as to enable us to propoſe a rational mode of treatment; and it is from this want of diſcrimination that ſo many valuable remedies fall into diſrepute; and that the applications which are found uſeful in the hands of one practitioner, fail in thoſe of another.

If neceſſary to confirm our opinion, we could bring forward many examples of the moſt powerful remedies proving very hurtful from being made uſe of in an improper ſtage, or to an improper ſpecies of inflammation. Our readers muſt be able, after a little reflection, to remember ſuch. We may only mention ſcarification as one uſeful remedy, which is much abuſed. Commonly ſpeaking, it is recommended in ophthalmia; but the caſes are numerous, where it is not only uſeleſs, but extremely hurtful, and the more ſo, if it is not very dexterouſly performed.

In the treatment of ophthalmia, our author lays down the ſame plan of treatment which is generally followed in this country; and he points out at ſome length, and with conſiderable preciſion, the proper periods for the exhibition of the different remedies.

HYPOPION.

Our author conſiders the practice which has been recommended by eminent oculiſts, of giving an outlet to purulent matter collected behind the cornea, or between its layers, by making an inciſion through that coat, as highly improper.

When the eye is in a ſound ſtate, a wound of the cornea with a ſharp-pointed inſtrument is neither attended with much pain, nor followed by any ſerious conſequences; but when a ſimilar wound is inflicted, while, at the ſame time, there is an accompanying diſeaſe, the final event is not ſo eaſily foreſeen. When an inciſion is made in the cornea, in order to evacuate pus collected behind it, it commonly oozes out ſo ſlowly, that almoſt the whole aqueous humour eſcapes along with it; and if, from any accident, the edges of the wound be prevented from uniting, a fiſtulous opening is formed, through which the aqueous humour perpetually oozes out, or the iris paſſes through it, and forms a hernia. We ought to be aware of all thoſe accidents, before making an inciſion through the cornea; and at the ſame time be aſſured, that very large collections of purulent matter are often abſorbed, even after it has been long ſtagnating in the anterior chamber. We therefore agree with Scarpa in thinking that ſuch an operation will ſeldom be neceſſary; that the cure is to be accompliſhed by the abatement of the inflammation; and if the abſorption do not take place after the accompanying inflammation is removed, that it is to be accelerated by the application of ſtimulants.

CATARACT.

'It has been long diſputed,' ſays our author, 'which of the two modes of operation, extraction or depreſſion, deſerve the preference; and the advocates for each have exaggerated the advantages of the one, and diſadvantages of the other. But impartial obſervation and experience, which muſt decide in all caſes, ſeem to have pronounced in favour of the antient method of treating the cataract, that is to ſay, in favour of depreſſion, which is more eaſily executed than extraction; becauſe, by depreſſion, as by extraction, we can cure every kind of cataract, cryſtalline, membranous, ſolid or fluid; becauſe depreſſion is followed by ſymptoms leſs ſevere, and leſs dangerous than thoſe which ſometimes happen after extraction; and from the circumſtance, that if the depreſſion does not ſucceed, we are able, without any riſk, to repeat the ſame operation two or three times on the ſame eye; which we cannot do when extraction has not had the deſired ſucceſs.'

It would be out of place for us to enter into any long and elaborate diſcuſſion on this ſubject; it has been already canvaſſed by the moſt able writers and moſt experienced ſurgeons; but we think it proper to make a few remarks, as the opinion of our author is not only oppoſite to that which we have always ventured to entertain, but as it is generally combated by the moſt diſtinguiſhed oculiſts of the preſent day.

It is commonly believed, that the operation of extracting the cataract is the moſt difficult, and requires more manual dexterity than any other operation in ſurgery. This muſt be one great cauſe of its want of ſucceſs; and if we examine with attention the numerous objections which have been brought forward againſt this mode of operating, we ſhall find that they all ariſe from errors or faults in its performance, and not from any defect in the nature or principles of the operation itſelf. All the different ſteps too of the operation are readily ſeen by the byſtanders, ſo that the ſurgeon is always liable, on any want of dexterity, to be accuſed of awkwardneſs.

No little ſkill and dexterity are alſo neceſſary to perform the operation of couching, ſo as completely to remove the opaque lens from the axis of viſion, without injuring any important part. But every one muſt be aware, that no ſpectator, even the operator himſelf, can know how much injury his needle has done to the very delicate ſtructure within the ball; and as he takes good care to ſhut the eye-lids before he withdraws his inſtrument, it is entirely out of our power to aſcertain whether the lens remains depreſſed, or whether it regains its original ſituation.

In fact, we find, therefore, that every young ſurgeon, ſatisfied of the ſuperior advantages of extraction, performs it, on all occaſions, in preference to couching; if his firſt attempts are ſucceſsful, and if he finds himſelf equal to the taſk, his opinion becomes confirmed by experience. But if he proves an unſucceſsful operator, or a complete bungler, he is glad to relinquiſh it; and if he ſtill perſiſts in being an operator, he ſeizes the couching needle as his laſt reſource, plunges it in with the impetuoſity of deſpair; and, after ſtirring about the humours of the eye for a while, he declares that the opaque body has diſappeared; he makes the patient believe he ſees better, and, after keeping cloſe and faſt the eye-lids, he artfully withdraws his needle, and thus finiſhes his operation.

It therefore appears to us, that, in order to make choice of either of the two operations, we have only to inquire, whether extraction can be performed, and whether we are capable of performing it.

We have thus freely ſtated our general opinion on this intereſting ſubject; but, as we mentioned before, it would be out of place here to enter more fully into this diſcuſſion. The ultimate ſucceſs is the *argumentum crucis*. Let the young ſurgeon look back and examine the ſmall ſcale of practice which he has had an opportunity of obſerving, and let the old practitioner examine the event of the caſes he has met with; let him mark down thoſe on whom the operation of extraction has been well performed, and obſerve the final event; let him do the ſame with thoſe numerous caſes he has ſeen couched, and we may venture to ſay, that the number among the latter will be but ſmall, who have recovered a moderate power of viſion; whilſt the greateſt proportion of thoſe who have ſubmitted to extraction will have had their ſight ſo completely reſtored, as to enable them to follow their uſual occupations.

However widely we may differ from our author in our general opinion of the ſuperior advantages of extraction, yet we cannot avoid ſtrenuouſly recommending this part of the work to the mature conſideration of our readers, as it contains ſome very ingenious remarks on the modes of performing the operation, and on the means to be employed in particular caſes.

On this head, then, we have only to mention, that he has recommended the uſe of a needle which has been delineated in Mr Bell's Syſtem of Surgery; it is juſt the common ſpear-pointed needle, with a ſlight bend or curve near the point. With this inſtrument he finds that it is much eaſier to lay hold of the lens, to puſh it out of its place, and to withdraw it without pulling the lens back into its former ſituation. It is alſo much recommended in caſes where the capſule has become opaque. With a needle of this curved form, he ſeizes the opaque flocculi, and puſhes them through the pupil into the anterior chamber, where they are left to float in the aqueous humour; and there, he ſays, they are ſooner abſorbed than if they had been allowed to remain in the poſterior chamber. Our author employs the ſame curved needle for making an artificial pupil, which is the ſubject of the 16th chapter. After ſome obſervations on the mode adopted by Cheſelden and Janin, and on the frequency of its failure, he propoſes a new operation, which is, to introduce through the ſclerotica a curved needle, and with this inſtrument to detach a portion of the iris from the ciliary ligament.

OF STAPHYLOMA.

FORMERLY, this name was applied to various affections of the eye, in which its form was changed, and its organization was much deſtroyed. Richter, however, and our author following him, limit its acceptation to that diſeaſe where the cornea loſes its natural tranſparency, and changes its original form.

There are ſome intereſting obſervations on the change of ſtructure which takes place in this diſeaſe; but when we looked for any rational or ſucceſsful mode of cure, our hopes were diſappointed: he mentions having employed, without any benefit, the butter of antimony, a remedy, though recommended by Richter, which has proved equally unſucceſsful in the hands of many.

Our author concludes his work, after treating of dropſy of the eye, and of amauroſis, with ſome obſervations on calculous concretions within the eye-ball; but as we have already encroached too far, and as there is nothing new or ſufficiently intereſting, we muſt refer our readers to the work itſelf. We cannot help, however, before we finiſh this ſubject, ſtrongly recommending the peruſal of this work to thoſe intereſted in this branch of medical knowledge, as containing much accurate obſervation, and abounding in uſeful practical information.

II.

An Inquiry into the Rot in Sheep and other Animals, in which a Connexion is pointed out between it and ſome obſcure and important Diſorders in the human Conſtitution. By Edward Harrison, M. D. F. R. A. S. Edinburgh and Aberdeen. 8vo. London, 1804.

Comparative anatomy has, within theſe few years, been moſt ſucceſsfully cultivated and improved. The ſame ſpirit of philoſophical inquiry is only required to make equally intereſting, if not more important diſcoveries, in another branch of this ſcience, which may be called *comparative pathology*. It is, indeed, not a little remarkable, that the diſeaſes of horſes, cattle, and ſheep, which occur ſo frequently, and are ſo ſeriouſly lamented, ſhould be ſo imperfectly underſtood. No greater benefit could be conferred on phyſical ſcience than a complete hiſtory of the diſeaſes of our domeſtic animals, eſpecially if given by any one endowed by nature with ſuperior acuteneſs, and a talent for obſervation, improved by habit and experience; who could deſcribe the ſymptoms and appearances of the different diſorders, point out the analogies with thoſe incident to the human body, detect thoſe minute circumſtances which ſerve to diſtinguiſh them, claſs them under their proper heads, and correct all the confuſion in which they now lye involved. Veterinary medicine has lately occupied ſome ſhare of attention, chiefly as relating to horſes, and as a diſtinct purſuit from the general ſtudy of all the diſeaſes of animals, but conſidered apart from any relation or inquiry concerning the treatment of the morbid ſtates of the human ſyſtem. It is in this laſt point of view that comparative pathology ſeems to offer ſo many ſubjects worthy inveſtigation; and, when looked upon in this light, it ſtrikes us as one of thoſe ſtudies, ‘ *quæ ad nos pertinent, et quæ neſcire malum eſt.* ’

Perhaps it may be objected, with ſome apparent plauſibility, that from the different formation of the bodies of quadrupeds, the different ſtructure of their organs, and the diſſimilarity in their diet, functions, and habits, their diſeaſes can afford no fair analogical illuſtration of thoſe incident to mankind; and that remedies, which are ſucceſsful in one caſe, will not be equally ſo in the other. As to any objections to the compariſon being degrading, which may ariſe in the ſqueamiſh minds of ſuperficial thinkers, it is ſufficient to anſwer, by declaring that all ſuch notions are unworthy of man; ‘ proud man, dreſt in his little brief authority!’ What is to be ſaid in reply to the firſt and only apparent objection? Why, in the firſt place, it may be remarked, that concluſions in medical ſcience can only be formed by experiment and induction. Animals are ſubject to many of the ſame diſeaſes, and theſe diſeaſes are cured by the ſame means as among ourſelves; and notwithſtanding ſome diverſity in the ſtructure and form of their bodies, yet they have heads and hearts, brain, lungs, and ſtomach; and the general principles of their economy, and the laws which regulate their organization, are preciſely the ſame as in our own bodies. They are ſubject to diſeaſes belonging to the four great diviſions of noſological writers; to pyrexiæ, phlegmaſiæ, cachexiæ, and neuroſes. Fevers are, in general, accompanied by local inflammation; and ſuch complaints are very common. Horſes are very liable to pneumonia; they ſuffer ſometimes from rheumatiſm, and even from gout, as we are told by authors on the veterinary art.

Spaſmodic complaints often occur among them; and it has been ſaid, where one of the human ſpecies ſuffers from locked jaw in this kingdom, 10 or 20 horſes are affected by it. Animals are ſubject to the ſame decays and diſeaſes of the intellectual powers as man; in old age they become feeble and ſtupid, and they are ſubject to mental derangement. Scrofula and pulmonary conſumption extend their ravages beyond the limits of civil ſociety. Monkies and apes, which have died at Exeter Change, have always been found, on diſſection, to be labouring under ſome ſcrofulous affection; and moſt of them have died of true phthiſis pulmonalis. Cows are frequently affected by phthiſis;* and ſheep appear to ſuffer from a ſimilar diſorder, though it is called by a different name. Cutaneous diſeaſes are very common among brutes, eſpecially among pigs and ſheep. There is an eruptive diſeaſe of ſheep, which, from its deſcription, would ſeem to bear a very ſtriking reſemblance to ſmall-pox.† It appears in the form of inflamed puſtules on the teats, thighs, and other parts of the body not covered with wool. It is diſtinguiſhed into a diſtinct and confluent ſpecies; it is attended with conſtitutional affection; and Vitet adds from report, that the ſame animal does not ſuffer from this complaint more than once. It is known in France under different names; in this country, every eruptive diſorder in ſheep goes under the name of *ſcab;* much, therefore, remains to be known about this puſtular diſeaſe, and of the ſuppoſed efficacy of ſome late trials reported to have been made to prevent it, by inoculation with vaccine virus. This curſory enumeration of ſome pathological facts, connected with the lower animals, is merely intended

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* Beddoes on Conſumption.

† Vitet, Med. Veterin. tom. 2.

tended to ſhow how wide a field is open for reſearch and diſcovery. Experiments with new and powerful medicines, whoſe efficacy is not well appreciated or defined, cannot be made often on patients of the ſame tribe as ourſelves; they are prevented for obvious reaſons: but there is no reaſon why ſome trials ſhould not be made, by adminiſtering them to animals when ſick, which are too often neglected, or, what is worſe, badly treated. Our materia medica might perhaps be improved, by attending to the different indigenous plants which are uſed by farriers and country people, or by adminiſtering others, ſome of whoſe properties are already but imperfectly known. The *digitalis*, whoſe efficacy in inflammatory diſeaſes is not at preſent well underſtood, might be employed in inflammatory diſeaſes of horſes and cattle; and ſome analogous remedies might perhaps be obtained, by attending to the effects produced by different noxious vegetables, which are ſometimes ſwallowed in too great a quantity. Some caution will be required in drawing concluſions from the effects obſerved in animals, although there is no chance of deception from one very common ſource of error, the imagination of the patient; for it is well known, that ſome ſubſtances, whoſe effect is determinate on the human frame, produce no ſuch action in the bodies of other animals. Our domeſtic animals are ſubject to dropſy, under almoſt all its forms; ſome comparative trials might, in ſuch inſtances, be made with medicines, tapping, and the uſe of injections into the cavities. Hitherto there is little exact information with regard to hydrophobia; the opinions reſpecting its nature and its treatment are various and contradictory. Several important points remain ſtill to be determined, and might be aſcertained without much difficulty. Is it a diſeaſe depending upon inflammation, or not? By what ſpecies of animal is it capable of being propagated? What period does abſorption require to take place? What will prevent the acceſſion of the diſeaſe after the bite? What medicines, and what general mode of treatment, poſſeſs any power in alleviating or removing the ſymptoms? What is the effect of cold during the period of the diſeaſe? Theſe and many other ſuch queſtions will readily preſent themſelves to any perſon who reflects upon what we do not know about hydrophobia; and many other diſeaſes might be pointed out, where our ignorance is nearly as complete, and which appear capable of being illuſtrated by a ſeries of comparative inveſtigations. Diabetes, a complaint equally obſcure and obſtinate, is ſaid to occur both in horſes and cows; it would be intereſting, in any ſuch inſtance, to analyze the urine and the blood, and to compare the reſults with thoſe of the fluids in health.

Epidemic and epizootic diſeaſes are very cloſely connected together; and this relation, if well underſtood, may be of great importance. It might lead us to infer, that ſuch diſeaſes are propagated, in the firſt inſtance, by a more general cauſe than ſpecific contagion, and thus might enable us to prevent or to mitigate the horrors of an impending peſtilence. Peſtilential diſeaſes have been obſerved among animals from the earlieſt records of hiſtory. They are mentioned both in ſacred and profane writings: they in general precede the plague among men. *Homer*, *Thucydides*, *Ovid*, and *Lucretius*, have alluded to this curious fact moſt diſtinctly and particularly.

Some diſeaſes, which have been added to the catalogue of human infirmities ſince the days of Hippocrates, have been referred by conjecture to the brutes as their ſource. The venereal diſeaſe, the ſmall-pox, and the yaws, have been attributed to ſuch an origin, but with what truth ſeems doubtful. The cow-pox and hydrophobia prove clearly that ſome morbid actions may be communicated by inoculation from one ſpecies of animal to another. Syphilis and the ſmall-pox have been mitigated in their violence by ingenuity and experience; and the happy diſcovery of the cow-pox leads us to hope, that one of theſe evils will ſoon be made to diſappear, and perhaps, in ſome happier age, both will be known only by deſcription. There is good reaſon to believe, that ſome curious and uſeful information might be obtained reſpecting the origin of contagious diſeaſes, by a minute examination of the hiſtory of epizootic diſtempers. The *glanders*, for inſtance, among horſes, is one of the moſt formidable and highly infectious diſeaſes; yet this can be excited at any time; and the accumulation of animal effluvia will, under certain circumſtances, produce it. To multiply examples of the utility of ſuch inquiries would be unneceſſary: theſe hints are ſufficient for our preſent purpoſe, to point out the importance of this department of natural knowledge, and to excite ſome enlightened minds to the cultivation of it.

Similar ideas have given riſe to the eſſay before us, the firſt part of which is occupied with an inquiry into the nature of the ſoil, and the circumſtances which induce and which prevent the rot; and in this inveſtigation the author attempts to prove, that this diſeaſe in animals, and intermittent and remittent fevers in the human ſubject, are all produced by marſh miaſmata. In the ſecond part, the hiſtory of the rot in ſheep is given, with an account of the different theories which have been ſtarted to explain the cauſes of it; and the means of prevention are ſuggeſted. Dr Harriſon refers this diſorder wholly to the liver; and he gives a vague and confuſed definition of it. Perhaps what is ſtated at the beginning of his eſſay may be called an explanation; but it is very unſatisfactory. No words could better expreſs the haſty and ſuperficial view on which theſe partial judgements are commonly founded. It ſeems moſt probable, that the term *rot* was firſt employed to characterize a diſorder and decay of the whole ſyſtem, and was afterwards applied to every fatal or chronic complaint. It is now ſometimes uſed, by ignorant farriers, to ſignify the fatal termination of pneumonic inflammation in horſes, and is ſtrictly as applicable to a diſeaſe of the ſkin as to any morbid ſtate of the thoracic viſcera. Like the word *ſtaggers*, it is a convenient word, and is often employed in a general ſenſe to ſignify very different complaints, though it is ſometimes accurately enough applied to diſtinguiſh one particular diſeaſe.

The firſt queſtion that preſents itſelf is, What is the exact nature of the rot in ſheep? The ſecond, To what cauſe is it to be aſcribed? If we wiſh to be accurately acquainted with this diſeaſe, and to be able to prevent its ravages, we muſt endeavour to ſolve theſe queſtions, beginning with the laſt. Marſh miaſmata appear, on the firſt ſuperficial glance, to be one cauſe of the rot. Dr Harriſon conſiders this the only true cauſe; and he does not trouble himſelf to inveſtigate the other cauſes alleged, more narrowly. Like the knights-errant of old, who wandered about to attack giants and dragons, he does not ſeem to entertain the leaſt doubt of the exiſtence of ſuch monſters as marſh effluvia. That ſome connexion ſubſiſts between wetneſs of the ſeaſon and moiſt diſtricts and paſtures and the rot, is well eſtabliſhed by innumerable facts; but it does not appear that this connexion is neceſſary or univerſal, even from our author's own confeſſion: for the rot does not occur on marſhes near the ſea, nor in ſome bogs and ſwampy tracts in Ireland, nor on peat moſſes, nor on chalky lands, though moiſt. (p. 11.) Dr Harriſon attributes theſe exceptions to the influence of the miaſmata being counteracted by the combination of ſaline particles and other ſubſtances. Intermittent fevers are certainly more frequent in the neighbourhood of marſhes and ſwampy grounds. Theſe complaints, however, do not ſolely ariſe from that cauſe, ſince perſons reſiding in the middle of large cities and towns have obſtinate intermittents, without ever being expoſed to ſuch remote cauſes. In anſwer to this, Dr Harriſon ſays, that he does not mean to affirm that the ſame identical miaſmata are equally the cauſe of all the diſeaſes enumerated in his eſſay; for probably different ſoils exhale different noxious miaſmata. It is obvious that no refutation of ſuch reaſoning as this can be given; becauſe we know nothing of the chemical qualities of theſe effluvia.

Our author next proceeds to examine *eight* different theories or hypotheſes that have been brought forward to explain the cauſe of the rot in animals. He adduces objections, and ſatisfactorily refutes moſt of theſe; but he ſeems to treat the common notion of the rot being produced by flukes with too great contempt; becauſe he is at a loſs to conceive how theſe *faciolæ hepaticæ*, or their *ova*, can penetrate into the ſubſtance of any viſcus, or into the blood-veſſels, during life. He challenges the ſupporters of this opinion to ſhow ſome of the faciolæ out of the body, and mentions his having repeatedly examined ditches and paſtures in vain; though he ingenuouſly confeſſes he looked for them without much care and attention. The difficulty of explaining a fact does not always leſſen its authenticity; and, in the preſent inſtance, we have an intereſting fact on record, which well deſerves attention. In the firſt volume of the *Monthly Magazine* there is a valuable communication, which ſtates, that a jelly-like ſubſtance, reſembling flukes, was diſcovered ſoon after a piece of land, formerly notorious for cauſing the rot in ſheep, was under-drained; and ſome of the inſects, exactly like flukes, but whoſe real nature was not aſcertained, were found near this ſpot on a plant called *brook-weed* (*ſium nodiflorum*), a common ſpecies of water-parſnip.

After ſtating his own opinion, that the rot is occaſioned by poiſonous effluvia, which, under certain circumſtances, are emitted from marſhy ſoils, our author endeavours to enforce this as the moſt plauſible hypotheſis, and refers to the *nervous energy* for an explanation of the phenomena. This is placing Pelion upon Oſſa; referring an unknown circumſtance to a cauſe ſtil more inexplicable. Many of the facts related, however, are both curious and intereſting, and prove the author's zeal in the inquiry he has undertaken. Having thus given the general outlines of Dr Harriſon's eſſay, this opportunity may be ſeized for ſubmitting a few hints for farther conſideration; and as it would be preſumptuous to advance any thing with great confidence on ſo dark and difficult a ſubject, theſe few remarks will be offered in the form of queries. Are there not three diſtinct diſeaſes in ſheep confounded together under the general term *rot?* Do not theſe diſeaſes reſemble *phthiſis pulmonalis*, *hepatitis*, and *ſcorbutus*, in the human ſubject? The firſt characterized by cough, hectic fever, and emaciation; the ſecond by inflammation, enlargement and thickening of the membrane of the liver, or by a diſeaſed ſtate, in which flukes are found in the biliary ducts; and the third diſeaſe reſembling ſcurvy, which appears to be the common form of the rot. To this laſt diſeaſe, the word rot is particularly applicable. The ſymptoms deſcribed by Dr Harriſon,

ſon, and all other authors, ſhow the diſeaſe to be of that general nature, like ſcurvy in the human conſtitution. The dulneſs of the eyes, the foulneſs of the breath, the livid whiteneſs of the gums, the yellow and black ſpots of the ſkin, the eaſineſs with which the wool ſeparates from the pelt, all demonſtrate the morbid ſtate of the whole ſyſtem. The cauſes which produce the rot are ſimilar, ſuch as noxious and improper food; deficiency of food, from the paſtures being too poor, or the herbage too ſucculent; expoſure to cold and wet weather. The method of cure alſo corroborates this opinion. Tonic medicines, as preparations of iron, are recommended, and Mr A. Young is diſpoſed to think favourably of ſuch medicines. Turning the animals on ſalt marſhes, feeding them at home with dry good hay, and dry lodging, draining the wet land, and ſtocking it with a leſs number of ſheep, have been found the beſt means of curing and preventing this dreadful diſorder.

Upon theſe three ſuppoſitions, then, which have been ſtated with regard to the nature of what is vulgarly called the *rot*, moſt of the oppoſite and contradictory opinions ſeem to admit of being reconciled. The different alleged cauſes, the different ſymptoms, and the different modes of prevention, ſeem to admit of an eaſy ſolution, by thus reducing them under three heads. It muſt, however, be confeſſed that much remains to be done, and much diſcrimination ought to be uſed. With a view of aſſiſting the laudable exertions of ſuch individuals as the author of the work alluded to, theſe hints are ſuggeſted for farther inquiry. To promote this deſirable object, the *Board of Agriculture*, whoſe labours do them ſo much honour, ought to circulate a liſt of queries, and offer a premium for the beſt experimental eſſay on the rot of ſheep. Much uſeful information might thus be collected, and the numerous hiſtories and diſſertations would tend to illuſtrate many intereſting and important points in pathology.

A ſeries of queſtions on the diſeaſes of different animals might be circulated by the ſame reſpectable authority, and by the cooperation of the enlightened medical practitioner and the intelligent farmer, and the honeſt, artleſs, experienced peaſant; the hiſtory of all maladies might be rendered more perfect; a ſubſtitute might be diſcovered for mitigating the evils of the moſt virulent, and a cure might, by ſome fortunate accident, be deviſed for the moſt diſtreſſing infirmities of mankind.

III.

Succincta Deſcriptio Febris Epidemicæ Malagæ nuper ſævientis; Symptomatumque ipſam comitantium, unà cum Methodo ei medendi adhibita. Auctore D. JOANNE EMMANUELLE ab AREJULA, edita juſſu D. P. TRUXILLO; Rerum Militarum Civiliumque Rectoris Malagæ. Ex Hiſpanico in Latinum verſa a J. S. FRANK, M.D. 8vo. p. 44. Viennæ. 1805.

THIS ſhort hiſtory of the fever which raged at Malaga in the autumn of 1803, was written and publiſhed at the particular requeſt of the chief magiſtrates of that place. The author, Dr Arejula, was ſent by the Spaniſh government to inquire into the nature of the epidemic (or the plague, as it was called), then committing ſuch havoc at Malaga, from his having acquired great celebrity by his ſkilful treatment of the diſeaſe at Cadiz and Medina Sidonia in 1800 and 1801. By order, Dr Frank has tranſlated this account into the German, and he has voluntarily undertaken to give it a more extenſive circulation by retranſlating it into the Latin language. From the extravagant praiſe beſtowed upon the author by his tranſlator, and the copious liſt of complimentary Latin epithets laviſhed on the method of cure, our expectations were raiſed very high, but in theſe we have been diſappointed; for, after reading the treatiſe with care, we find little to commend either in point of accuracy in relating the ſymptoms, or in any diſplay of judgment and ſkill in the treatment of the diſeaſe. On a ſubject ſo important, where our ſources of information are ſo few and imperfect, we ſhall beſt perform our duty by giving a full analyſis; as full, indeed, as the very narrow and incomplete view which the author himſelf has taken will allow. It muſt be obſerved, Dr Arejula apologizes for the brevity of his hiſtory, by confeſſing that he does not propoſe to give any full ſyſtematic deſcription. This important duty he defers till ſome future time; he propoſes merely to detail the ſymptoms as he ſaw them, and to deſcribe the method of cure which he diſcovered ſome time ago, and which long experience taught him to prefer to every other.

On his arrival at Malaga in the month of October 1803, Dr Arejula immediately pronounced the diſeaſe then prevailing to be the ſame as that which had been ſo violent and fatal at Cadiz two ſeaſons before. After examining the patients in the hoſpital, he ſummoned a conſultation of all the medical practitioners in the place, who appeared capable of communicating the obſervations they had made in their attendance on the ſick. At this meeting it was determined that the prevailing epidemic was *typhus icterodes*, or *the yellow fever*. Every one of the fraternity aſſented to our author's diagnoſis; and this report was ſoon announced to the Prefect of the town, and proper ſteps, it is ſaid, were immediately taken to extinguiſh and to prevent the ſpreading of this contagious malady. It will appear, however, from the ſequel, that the idea of the contagious nature of the diſeaſe had no influence in directing the means for putting an end to its ravages; for no mention whatever is made of any attempt to check the progreſs of contagion.

Deſcription of the Diſeaſe.—This fever began with chillineſs, ſometimes with a cold fit; in a few hours the pulſe became quick and weak, the temperature of the body greater than natural, and it continued ſo through the whole period of the diſeaſe; but it was not the ſame in every ſtage; the patient complained of pains over his whole body, and of proſtration of ſtrength; the functions of the brain very little impaired; urine natural; colour of the ſkin yellow, or pale inclining to yellow; the febrile actions generally terminated on the third, fifth, or ſeventh day. From this general train of ſymptoms, our author inferred that the fever was what is called the yellow fever. He next deſcribes the diſorder more particularly. The firſt attack was often quite ſudden and unexpected. The ſymptoms were ſometimes regular, ſometimes irregular, in their appearance. Shivering, ſlight chillineſs, but never evident coldneſs, violent pain in the head, pains over the whole body, eſpecially in the back, great heavineſs of the eye-lids, were the moſt conſtant ſymptoms. The patients complained of great languor and dryneſs of the noſtrils; the tongue however was moiſt, and leſs foul; the ſkin became yellow, eſpecially after the third day; the brightneſs of the eyes diſappeared, and the whiteneſs of the cornea was ſo changed to a reddiſh colour, that an inexperienced obſerver would ſuſpect the beginning of ophthalmia, or the prevalence of inflammatory diatheſis. The features became collapſed, the ſick refuſed all ſorts of animal food, the pulſe ſometimes ſeemed to be ſtrong, ſometimes ſo weak as to indicate great want of energy in the circulating powers. All deſire of food then ceaſed, frequently all efforts to vomit were at an end; then diarrhœa took place. Sometimes both theſe ſymptoms occurred at the ſame time, and the matter diſcharged was very fetid. An uneaſy ſenſation was felt in the ſtomach, profuſe perſpiration broke out, and the urine became tinged with bile. Theſe ſymptoms remitted, either with or without ſweating, after 24 hours; an exacerbation took place the next day, and remiſſion or complete opyrexia followed on the 3d, ſometimes on the 4th or 5th, ſometimes even on the 7th day; though this rarely happened. The animal functions were not much diſturbed by the ſymptoms juſt enumerated, as long as the fever did not become more violent; after theſe ſubſided, debility and want of appetite only remained. Symptoms which are denominated irregular or anomalous, exceſſive ſhivering and manifeſt coldneſs at the commencement of the diſeaſe; inordinate febrile action; tremulous, dry, and foul tongue; violent headach; pain, ſwelling, and redneſs of the eyes; wearineſs in the limbs, ſometimes inability to move them; conſtant nauſea, and vomiting of yellow, bilious, and dark-coloured matter; pain in the region of the liver; ſenſe of heat in the ſtomach; coldneſs of the extremities; the fæces tinged with the ſame black bile as that ejected by vomiting. Exceſſive reſtleſſneſs and anxiety ſeized the ſick; their ſpeech became affected, their voice hoarſe, and they anſwered ſlowly; pain in the throat preventing deglutition, and deafneſs came on; red and black ſpots appeared on thoſe parts of the body expoſed to preſſure; complete jaundice took place; dark coloured blood diſcharged from the fauces, noſe, uterus, and anus; retention of urine; and the irritation in the urethra was ſo great, that the patients were often obliged to nip the penis, as thoſe unfortunate ſufferers from a ſtone in the bladder are accuſtomed to do. Hiccough, coldneſs of the whole body, and blackneſs of the lips, cloſed this dreadful tragic ſcene. In ſome few inſtances, the whole train of theſe ſymptoms occurred in the ſpace of 24 hours; in others, after the 3d, 5th, and 7th day. Dr Arejula obſerved them ſometimes to appear on the 11th, and even on the 13th day of the fever, eſpecially cardialgia and black vomiting. Stupor, violent and furious delirium, ſeized the unfortunate victims. Three patients retained their ſenſes and preſence of mind till their death. Many ſuffered neither from vomiting nor from diarrhœa; exceſſive coldneſs and difficulty in breathing ſoon attacked them. In the middle of November, petechiæ were often viſible; and, at the end of this month, the fever aſſumed the tertian and quartan type of an intermittent, which is always conſidered as a ſign of the decline of the epidemical malady. Thoſe affected with this fever at Malaga ſuffered more from proſtration of animal powers than thoſe who had been under our author's care at Cadiz. Another difference obſerved was, that a profuſe ſweat never broke out ſpontaneouſly in this epidemic, by which, in the other epidemics alluded to, many were freed from the fever, and even in the firſt days of its attack. Sweat was never obſerved to break out at Malaga till after the adminiſtration of an emetic.

Prognoſis.—The prognoſis was very uncertain; it often happened, when the phyſician conſidered his patient free from all

danger,

danger, that he expired, after a relapſe, in a few hours. If the fever began with ſlight chillineſs followed by moderate heat, and regular exacerbations took place every 24 hours; if the pulſe were ſtrong, the tongue moiſt, the power of lying on either ſide, and of continuing in that poſition, and mental faculties were unimpaired, theſe were favourable ſigns. Jaundice appearing over the whole body, at any period of the diſeaſe, was looked upon as favourable, eſpecially after the 6th day. This ſymptom was not ſo common at Malaga as at Cadiz. The debility was greater at the former of theſe places. Perſons born or brought up in a warm climate ſuffered leſs from this epidemic than thoſe who came from a colder country, and the danger was proportionate to their vicinity to the frigid zone. Deafneſs, which was always conſidered, by the author and others, as a good ſign in all fevers, in this diſeaſe was always a bad omen; its occurrence was invariably followed by death. Vomiting and purging of dark-coloured matter, diſcharge of cruor from the different cavities of the body, violent cardialgia, petechiæ, &c. were all unfavourable ſymptoms. Thoſe perſons weakened by any chronic complaint, or by any exceſſes, fell a ſacrifice to any attack of this fever.

Methodus medendi.—The unfortunate ſufferers, who applied for medical aid, are divided by the author into four ſeparate claſſes. 1. Thoſe in the beginning of the diſeaſe, accompanied by all the regular ſymptoms. 2. Thoſe who have regular ſymptoms, but the two firſt days of the fever are paſt. 3. Thoſe in the firſt ſtage of the fever, with irregular ſymptoms. And, 4. Thoſe advanced to the third day of the diſeaſe, in which the ſymptoms have been irregular from the beginning. Two general indications were purſued in each of theſe different ſtages; 1. To evacuate the bile and ſordes collected in the abdominal viſcera; and, 2. To excite and ſupport the animal powers by ſtimulating remedies. In the firſt inſtance, if the phyſician be called at the commencement of the fever, Dr Arejula directs no remedy to be given till the febrile chillineſs had entirely diſappeared. After 10 or 14 hours, which the firſt ſtage of the diſeaſe occupies, two ſpoonfuls of a very weak ſolution of emetic tartar to be given every quarter of an hour till nauſea be produced; large quantities of warm water were then to be drunk, to excite vomiting. As ſoon as the evacuations ceaſed, and theſe were always to be very moderate, meat broth was adminiſtered; and, an hour and a half afterwards, one drachm of *Pulv. Cort. Peruv.* was given and repeated every three hours, ſome ſoup being taken during the intervals. Theſe medicines were perſiſted in for three or more days, until they produced the deſired effect. Some could not bear the bark in ſubſtance, and to theſe the tincture of bark was given as the powder. If the fever returned at any regular period, the bark in ſubſtance was the beſt, but *the doſe was always diminiſhed during the time of remiſſion*. Thirſt was allayed by vegetable acid drink; and the bowels were kept open by glyſters of ſea-water, or vinegar and water, uſed twice in the day. The vomiting was often checked by the uſe of theſe glyſters. Wine, or wine mixed with water, ſulphuric acid employed both as a mixture and a gargle, and ſinapiſms to the feet, were the other remedies commonly adminiſtered.

In the ſecond inſtance, when the diſeaſe is advanced beyond the firſt day, no emetic was given, but immediate recourſe was had to the bark, combined with gentle purgatives. Glyſters of ſea water, and ſinapiſms to the feet, were never omitted. Oily emetics, compoſed of oxymel of ſquills, and oil of almonds, were exhibited in thoſe caſes where the ſymptoms were irregular at the commencement of the fever; but no emetic in the other period of the diſeaſe. Bliſters were, in theſe inſtances, applied inſtead of ſinapiſms; and ſinapiſms were applied to the legs, ſoles of the feet, loins, and arms. To relieve particular urgent ſymptoms, as vomiting and pain in the ſtomach, compound medicines of Tinct. Cinchon. Liquor. Anod. Mineral. Tinct. Opii, Extract. Opii, and Æther, were ſometimes adminiſtered in very ſmall doſes. Porter and beer were allowed to convaleſcents.

Such is the conciſe deſcription of the epidemic at Malaga, and ſuch the remedies which are reported to have been employed with great ſucceſs in the treatment. Of the remote cauſes of this formidable diſeaſe, Dr Arejula takes no notice whatever; and he paſſes over, without any attention to them, thoſe general circumſtances which might give riſe to the fever, or contribute to its removal. Before any decided opinion can be formed of the preciſe character of this epidemic, which has appeared in Spain for ſeveral years paſt, other documents, and more numerous facts, muſt be collected. From this account, although publiſhed by authority, and by particular deſire, we learn nothing of the origin of the fever, nothing about the cauſes of it. No proof is adduced of its being contagious; and very weak arguments are offered to eſtabliſh its analogy with typhus. Almoſt every ſymptom mentioned in the hiſtory is ſubverſive of ſuch an opinion. The nervous ſyſtem was ſlightly affected; the animal functions were, in ſome inſtances, ſcarcely at all diſturbed; the febrile actions aſſumed a regular remittent or intermittent type; the acceſſion was ſudden, and ſtrongly marked; the cold, hot, and ſweating ſtages were often diſtinctly evident. Beſides, the exemption of perſons who had lived in warm climates, the diſcharge of large quantities of black bile, and the affection of the liver; all theſe circumſtances ſeem to ſhew, that the fever at Malaga was the ſame as the fever of the Weſt Indies and of America; that it is a diſeaſe of the climate, local in its origin, and moſt violent in its action; that it is not typhus, nor the continued fever of crowded cities and large towns, ariſing from accumulation of animal effluvia. The two diſeaſes appear, in many reſpects, eſſentially different, and ought not to be confounded together.

With regard to our author's practice, he muſt be commended for the judicious indications laid down, but not for the manner in which theſe indications were attempted to be fulfilled. Some allowance may be made for the difference of climate, ſeaſon, and ſome peculiarities in the conſtitution of the ſick; yet the method of cure muſt appear, to Britiſh practitioners, feeble, trifling, and ineffectual. What would be thought of a phyſician among us, leaving his patient 10 or 14 hours, at the commencement of a violent fever, without doing any thing but prepare the medicines to be adminiſtered, when perhaps it is too late for any medicine to be of any ſervice? In the more formidable ſtage of the diſeaſe, where ſome precious time has been loſt, and the moſt active means only can be uſeful, the practice inculcated is ſtill worſe; for Dr Arejula orders the doſe of Cinchona to be leſſened in the remiſſion at the very time it ought to be increaſed, if it ought ever to be exhibited in any ſtage of this diſeaſe.

Throughout the whole of his plan of treatment, the author ſeems afraid of exhauſting the ſtrength of his patients, forgetful of the depreſſing influence of morbid actions allowed to go on unalleviated and uncontrouled. His object ſeems to have been to palliate the moſt urgent ſymptoms, and ſo far his curative means might be ſucceſsful; but it is not unlikely he often flattered himſelf with having ſaved his patient, when he could only claim the negative merit of not killing him, when a good ſtrong conſtitution was enabled, with or without the aid of a few ſimple remedies, to withſtand the ſhock of this malady. The application of cold water and cool air ſeems to have been indicated by the increaſed temperature; but ſuch powerful and efficient remedies are not hinted at.

It is ſome conſolation to reflect, that the opinion of the nature of yellow fever, entertained by thoſe moſt converſant with it, is one moſt pleaſing, becauſe it diſpels all apprehenſion of its ever reaching our own ſhore. The proper means of prevention are not, however, to be neglected; and if ever ſuch an unfortunate affliction ſhould viſit our happy iſle, we may look forward with confidence to the moſt energetic and effectual means being adopted for putting an end to its ravages.

IV.

Médecine eclairée par l'Obſervation et l'Ouverture des Corps. Par P. A. PROST, du Département du Rhône. 2 tomes, 8vo. Paris. 1804.

THE title-page of this work reſembles the extravagant paintings and ſigns hung up at a raree-ſhow, or at an exhibition of wild beaſts; it conveys an exaggerated and incorrect idea of what is to be found within. M. Proſt ſeems to be a very firſt-rate ſhowman; he makes a great noiſe, talks much about himſelf, promiſes and proteſts much, and is continually crying out, ' Walk up, gentlemen, I am now going to begin:' Thoſe who are ſo unwary as to pay their money, will have little cauſe to return thanks for their entertainment. In the preface, the author informs us, that a complete knowledge of diſeaſed ſtructure has been the object of his reſearches for a conſiderable time; and his attention has been more particularly directed to the inveſtigation of febrile diſorders, and to the derangements of the animal functions.

After conſulting (he does not ſay *peruſing* or *ſtudying*) the different books on morbid anatomy, and after attending perſons who devoted themſelves to this branch of ſcience, M. Proſt was ſtruck with a notion that the great want of ſucceſs in all was owing to prejudice and careleſſneſs. In order to attain different reſults from his own labours, he reſolved to follow a contrary method. Inſtead of ſearching for the cauſe of diſeaſes in the organs ſuppoſed to be their ſeat, he has endeavoured to make himſelf acquainted with all organic affections, and to aſcertain the changes in the ſtate of the ſolids and fluids in all diſeaſes. This undertaking demanded on his part, he ſays, determined reſolution, undaunted courage, and a greater love for the lives of others than for himſelf. Before publiſhing theſe obſervations, he aſſerts that he has opened more than four hundred bodies; many of theſe diſſections occupied more than one day, and none leſs than ſeveral hours. In another part of the firſt volume, he ſtates, in a long note, that the immenſe extent of the undertaking, the importance of collecting materials, examining patients, noting down ſymptoms, and the time ſpent in *profound meditations*, and all this accompliſhed within the ſpace of eighteen months, ſo completely occupied his attention, that he was obliged to get a friend to correct the proof ſheets, whilſt he was engaged in preparing *copy* for the printer, Now, allowing one diſſection every other day, and ſome intervals for other things beſides *les meditations profondes*, the reader muſt form a vaſt idea of the writer's rapid execution and deſpatch. A long dull poem may be compoſed in a few weeks; two octavo volumes of fictitious hiſtory may be manufactured in eighteen hours; but eighteen months is a ſhort period indeed for the compoſition of a work on morbid anatomy, in which the moſt patient and cautious examination is neceſſary to aſcertain the real appearances of the moſt common and ſtrongly marked diſeaſes. To form any accurate concluſions reſpecting diſeaſes of morbid action, ſuch as fevers and nervous diſorders, in ſo ſhort a time, and in ſo haſty a manner, is quite impoſſible.

M. Proſt has devoted himſelf to public hoſpitals and anatomical ſchools; and he acknowledges great obligations which he has received from the phyſicians to different public eſtabliſhments. In 150 diſſections of perſons who died from irregular fevers (les fièvres ataxiques), he has obſerved nothing particular in the brain, but always found inflammation in the mucous membrane of the inteſtines. From this he infers, haſtily and eaſily enough, that inflammation of the mucous membrane of the inteſtines is the ſource of all fevers, and of almoſt all the diſeaſes incident to the human body. The following general concluſions are ſelected from a copious liſt of generalizations of the ſame ſort:—Inflammation of the internal membrane of the inteſtines may exiſt without the peritoneal coat being affected: This inflammation takes place without any pain; it diſturbs the animal functions: This diſturbance is modified by the degree of inflammation, by the nature and effect of the irritating cauſes, by temperament, climate, ſeaſon, and age.

The firſt part of the firſt volume is occupied with a number of queſtions, which it is the object of this book to anſwer; then follow ſome general reflections, and a vaſt many fine ſentences about different organs, their functions, and their mutual relations and ſympathies. Two hundred pages are filled with theſe *profound meditations*. The reſt of the work is made up of caſes and diſſections, to the number of one hundred and thirteen, comprehending moſt of the diſeaſes of noſology, phthiſis pulmonalis, fièvre-gaſtro-ataxique, delirium, mania, apoplexy, palſy, epilepſy, &c. &c. The hiſtory of the caſe is generally very ſhort, and the remedies employed are ſeldom mentioned; the account of the diſſection is always ſufficiently copious and minute, to a degree of affectation. There is method at leaſt in all this; for the appearance of the external parts of the body is always firſt mentioned; then the ſtate of parts in the neck, thorax, abdomen, and muſcles. Mania and epilepſy are conſidered as ariſing, for the moſt part, from worms in the inteſtines, which are moſt frequently found in the cæcum and the arch of the colon : in one epileptic patient, who was thrown into convulſions by preſſing the abdomen, three ſpecies of worms, lumbricus, teres, and aſcaris, were found all together. This is the only inſtance of this ſort which the author ever met with. He never examined the bodies of perſons who had ſuffered from convulſions, without finding inflammation of the inteſtines; and never opened an epileptic patient, without finding worms. The contrary of this is generally obſerved in other places: that, however, ſignifies but little to Mr Proſt; he ſeems to have read no other books except thoſe of his countryman Bichat; for he quotes only his name, and alludes to ſcarcely any other author. Bichat is the god of Mr Proſt's idolatry; and he probably conceives himſelf not inferior to his maſter, when he launches forth in praiſe of zeal for ſcience, and declaims about univerſal ſympathy, and the omnipotent influence of the inteſtines. The arrangement of this work is probably the arrangement which the author adopted himſelf, firſt to frame the hypotheſes, and ſecondly to look out for facts, or ſomething in the ſhape of facts, to ſupport his doctrine. One remark more will be ſufficient. How does it follow that every diſeaſe muſt ariſe from an inflamed ſtate of the internal membrane of the inteſtines, becauſe a redneſs or turgeſcence is generally obſerved in ſome particular parts? May not theſe be the effects of changes after death? At any rate, on a ſubject ſo vaſt and important, higher authority muſt be looked for, than can be fairly imputed to the author of this attempt to illuminate the obſcure parts of medical ſcience.

V.

The Principles of Botany and of Vegetable Phyſiology. Tranſlated from the German of D. C. Willdenow, Profeſſor of Natural Hiſtory and Botany at Berlin. 8vo. p. 471. Edinburgh. 1805.

This volume, with which we are now preſented in an Engliſh dreſs, is an elementary work, recommended to our notice not leſs by the high character imported with it from its native ſoil, where it has ſuperſeded, we are told, all other introductions to botany of the longeſt ſtanding and greateſt reſpectability, than by the celebrity of its author, Profeſſor Willdenow, already well known to every botanical ſtudent as the learned and induſtrious editor of Linnæus.

The principles of botany are here diſtinctly explained, under the following titles or ſections. 1. Terminology, 2. Claſſification, 3. Botanical aphoriſms, 4 The nomenclature of plants, 5. Phyſiology, 6. Diſeaſes of plants, 7. Hiſtory of plants, 8. Hiſtory of the ſcience.

Under the head of terminology, the reader will find, beſides an analyſis of the anatomy of vegetables, a very full, accurate, and inſtructive explanation of the various terms, both general and particular, employed by botanical writers to deſignate the different parts of plants, their various configurations and proportions, on the preciſion of which the perfection of deſcription and claſſification ſo much depends. The terminology is farther enriched by a copious index, and illuſtrated by upwards of 300 engravings, with correſponding references.

After ſome obſervations on the natural families of plants, and on the conſtruction of artificial methods, Profeſſor Willdenow proceeds, in the ſecond ſection, to lay before the ſtudent the outlines of the claſſes of different authors, from Cæſalpinus, the firſt inventor of a ſyſtem, to Linnæus, the author of that which is founded on the ſexual parts of vegetables. Though, upon the whole, the Linnæan ſyſtem is found to anſwer the purpoſes of botanical arrangement better than any yet propoſed, it muſt be acknowledged to be far from having attained the perfection required. Its chief imperfections may perhaps be traced to the attempt to unite the principles of an artificial arrangement with the natural orders of plants.

'Linnæus endeavoured, from the number of the ſtamina, their 'various lengths, and different modes of connexion, to unite a 'natural claſſification with an artificial one. Hence aroſe ſome 'faults, which would not have happened, had he at the ſame time 'made uſe of the corolla as a character. For inſtance, in the 'fourteenth claſs are contained the labiated and ringent flowers; 'but becauſe Linnæus characterized it from the four ſtamina, 'two of which are ſhorter, there are ſome of theſe plants which 'muſt ſtand in the ſecond claſs, and others in the fourth; there'fore they properly belong to this claſs. In the ſame manner, 'all the papilonaceous flowers are referred to the ſeventeenth 'claſs; but the aſſumed character, viz. that the filaments are 'united into two ſets, is not to be found in all theſe plants: 'many have the filaments united into one cylinder; and in the 'tenth claſs ſtand many plants with papilonaceous flowers. 'Theſe two faults are not the greateſt which may be attributed 'to this ſyſtem; it is a more important objection, that Linnæus 'has mentioned the ſtamina in the firſt claſſes without attending 'to their inſertion; while, in the twelfth, he remarks, that they

‘ are inſerted in the calyx; and in the twentieth that they ſtand
‘ on the piſtillum. In the nineteenth claſs are comprehended
‘ all the compound flowers, and yet he drags into the laſt order
‘ of this claſs other plants whoſe antheræ are only ſometimes
‘ united. It is alſo to be regretted, that in the 21ſt, 22d, and
‘ 23d claſſes, Linnæus has taken notice of different ſexes in the
‘ ſame plant, which he had not done before; there being many
‘ plants in the former claſſes that properly belong to theſe.’

Such are the general objections which may be urged againſt ſome of the foundations of the Linnæan claſſification. Attempts have ſince been made by later botaniſts to remedy ſome of theſe, chiefly by reducing ſome of the more defective claſſes, and referring them to others. By Thunberg the claſſes have been reduced to twenty, and by Liljebad to ſixteen. This ſection is concluded by a view of the Linnæan arrangement of the natural orders.

The 3d ſection, under the title of botanical aphoriſms, treats of the rules neceſſary to be obſerved in the ſelection of characters for eſtabliſhing the genera and ſpecies of plants. The rules are laid down in the form of aphoriſms, and elucidated by explanatory obſervations. The intelligent reader will at once perceive that theſe aphoriſms are for the moſt part literal tranſlations, but without acknowledgment, from the *Caractères* in the *Philoſophia Botanica* of Linnæus. And the ſame obſervation is applicable to the next ſection, which treats of the nomenclature of plants. This, too, is copied faithfully from the Philoſophia Botanica.

The advertiſement of the editors had led us to expect much from the 5th ſection, which treats of the phyſiology of plants; an explanation of the phenomena of vegetable phyſiology; on the principles of the lateſt diſcoveries in chemiſtry. We have not, however, been able to diſcover any application of theſe principles, with which the Engliſh ſtudent is not already fully acquainted; while, on the other hand, we have obſerved ſeveral omiſſions, both of facts and doctrines, of great importance in the explanation of the vegetable functions.

In detailing the phenomena of germination, the intereſting experiment of Achard and Humboldt are indeed referred to, and the neceſſity of the preſence of atmoſpheric air or oxygen pointed out; but it is deſcribed as a ſtimulus merely, capable of exciting the activity of the ſeed-veſſels, and its effects compared to or aſſimilated with thoſe of ammonia extricated from dung. The real effects of this agent, the chemical changes which are produced in the cotyledons by the abſorption of oxygen and ſeparation of carbon, have been entirely overlooked by Profeſſor

Willdenow, who was probably ignorant of the later experiments of Cruikſhank, Gough, Sauſſure, Woodhouſe, and Michelloti. From theſe we now know that the oxygen of the atmoſphere is abſorbed, and combined with the carbon of the cotyledons forming the carbonic acid gas, which is ſeparated and diſcharged during the proceſs of germination. The production of carbonic acid was found by Sauſſure to be always proportioned to the quantity of oxygen abſorbed.

The food contained in the cotyledons is thus chemically prepared and fitted for the nouriſhment of the infant plant, to which it is carried by the placentary veſſels. The proportion of carbon is diminiſhed, that of the hydrogen and oxygen increaſed, and the farina of the cotyledon changed into a ſaccharine chyle. Another condition aſcertained by the experiments of Ingenhouz, Sennebier, and Michelloti, to be eſſential to the perfect germination of ſeeds, is the excluſion of light; a curious fact, as this agent is ſo indiſpenſable to the healthy vegetation of the plant in all other ſtages of its exiſtence. Yet this circumſtance too is ſilently paſſed over by our author.

To attain a knowledge of the vegetable functions, in as far as theſe can be illuſtrated by the modern diſcoveries in chemiſtry, it is neceſſary not only to be acquainted with the chemical hiſtory of the principles and immediate products of plants, but to direct our attention alſo to the nature of ſoils and manures, with a view to diſcover the food of plants, or the origin of thoſe elements of which they are compoſed. The reſult of vegetable analyſis is accordingly exhibited by Profeſſor Willdenow, and a tolerably full account is given of the elements and productions of vegetation. In the enumeration of the natural productions or ingredients of vegetation, we remark the omiſſion of the acetic acid and acetites, the exiſtence of which in the ſap of plants has been demonſtrated by Vauquelin, and of tannin, while the gallic acid is deſcribed as a very aſtringent ſubſtance. The other branch of the inquiry, the food of plants, the ſources whence they derive the principles of their compoſition, is very ſlightly noticed; although, on this ſubject, the experiments and obſervations of Haſſenfratz, Sauſſure, Giobert, Kirwan, and others, furniſh many important hints to the phyſiologiſt.

Overlooking theſe, and paſſing over every other difficulty, Profeſſor Willdenow endeavours, however, to trace to their origin the carbon and hydrogen, which are without doubt the moſt abundant principles, and the chief, though not the only food of plants. His general theory, which we are able to collect only from detached paſſages of his book, ſeems to be, that the chief food of vegetables is water and carbonic acid, which are plentifully abſorbed by the roots and leaves, and decompoſed by the actions of theſe veſſels, aſſiſted by the influence of light; ſo that the carbon and hydrogen are fixed, while the oxygen is diſengaged in the form of gas. This theory, though not perhaps ſufficiently confirmed, we are inclined to regard at leaſt as highly probable. There can be no doubt that carbonic acid is thus decompoſed by the powers of vegetation, the carbon being retained by the plant, and the oxygen ſeparated in the gaſeous form. There may, however, be other ſources of the carbon of plants. It is probably abſorbed by the roots in the ſtate of diſſolved oxide: we know at leaſt that, in rich ſoils and different manures, a large quantity of carbon exiſts in this ſtate. It is equally certain that water forms a large proportion of the food of plants; that one part is decompoſed, and its elements fixed in various new compoſitions; that the hydrogen is conſolidated and retained, while the oxygen is employed in the formation of the different vegetable oxides and acids; that another part of the imbibed water is aggregated to the vegetable without change; while much the greater part is again tranſpired. There is no proof, however, that any part of the oxygenous gas tranſpired by the leaves proceeds from the decompoſition of water: On the other hand, the experiments of Prieſtley, Sennebier, and Woodhouſe, have almoſt demonſtrated that this is entirely derived from the decompoſition of carbonic acid.

Beſides hydrogen, carbon, and oxygen, vegetables contain other elements, in particular earths and ſalts, whoſe origin muſt alſo be referred to the food derived from the ſoil, and abſorbed, in a diſſolved ſtate, by the veſſels of the plant. But, for a variety of particulars reſpecting the food of plants, which the reader will ſeek for in vain in the elementary treatiſe now under review, we muſt refer him to the experiments of Haſſenfratz, Sauſſure jun. Giobert, and Vauquelin, in the Annales de Chimie, and Journal de Phyſique, to the Phyſiologie Vegetale of Sennebier, and Kirwan's Eſſay on Manures.

The functions of leaves of plants are more fully treated of by Profeſſor Willdenow than the other ſubjects already noticed. The abſorption and tranſpiration performed by the organs, the effects of light, and of the different gaſes upon them, and the changes produced on the atmoſphere, are detailed with all the illuſtration of the lateſt obſervations. The functions of the flowers are next examined with accurate conciſeneſs. The arguments for the ſexes of plants are clearly ſtated, and the ſexual doctrine ably defended againſt the attacks of a few ſceptics. This leads our author to the conſideration of the various theories which room, to which no inſects could get, and, for the greater ſecurity, likewiſe covered it. But could he, before the firſt flower appeared, diſtinctly enough diſtinguiſh the female plant of the hemp? And could not a very ſmall minute inſect eſcape his eyes, and effect a fecundation? Beſides, do we not find on female plants ſometimes a few male flowers, which perhaps was here the caſe? The few ſeeds which he got prove that a few ſingle parts were neceſſarily fecundated. But even ſuppoſing that in hemp the female plant produces ripe ſeeds without fecundation, can we draw any juſt concluſion from this ſingle plant to any other vegetable? We have in the animal kingdom an inſtance in the aphis, an inſect which, without the aid of a male, propagates itſelf till autumn. But who would, from this iſolated obſervation, founded as it is in truth, attempt to deny in all animals the exiſtence of a difference of ſex? Since Gleditſch firſt, in a botanic garden, impregnated the Chamaerops *humilis*, which is a female plant, with pollen of the male plant, which Koelreuter ſent to him from Karlſruhe, and obtained ripe ſeeds and young plants, which before never had been poſſible, thouſands of ſimilar experiments have been made, which put it beyond doubt that two ſexes exiſt in plants. Every perſon may indeed eaſily convince himſelf of the fact, by repeating ſuch experiments on the ſpecies of melon and gourd, and every where in the vegetable kingdom he will find two diſtinct ſexes.'

In the general anatomy of vegetables Profeſſor Willdenow cloſely follows Hedwig, and minutely deſcribes the vaſa adducentia, reducentia, ſpiralia, and lymphatica, even to their valves, aſſigning to each claſs its particular functions, with more preciſion, we fear, than is warranted by the accuracy of obſervation. The motion of the ſap is properly referred to the irritability and living pores of the veſſels; and, with regard to the courſe of the fluids, he ſeems to favour the opinion of a real circulation. That there are aſcending and deſcending fluids cannot be denied, the latter being derived from the former, after having undergone the changes of vegetation in the aſcending veſſels, and in the leaves; but it is more than doubtful that theſe ever again return upwards, or communicate a ſecond time with the aſcending ſap-veſſels; a circumſtance implied in the idea of a circulation. The general phenomena of vegetation, and particular obſervations, ſtrongly militate againſt the doctrine of the circulation of the ſap; and, excepting the analogy of animals, we know not a ſingle argument for its exiſtence. The experiments, indeed, of Mr Knight ſeem deciſive on the point, as they clearly prove the want of communication between the deſcending and aſcending veſſels *. The deſcending fluids, or proper juices of plants, ſeveral inſtances of hybrid plants which retain their original form, and propagate themſelves. I ſhall only mention a few with their parents:

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* Philoſophical Transactions, 1801.

Sorbus *hybrida.* The mother was Sorbus *aucuparia;* the father Cartægus *Aria.*
Pyrus *hybrida.* The mother was Pyrus *arbutifolia;* the father, Sorbus *aucuparia.*
Rhamnus *hybridus.* The mother was Rhamnus *alpinus;* the father, Rhamnus *alaternus.*

'What mixtures do not the ſpecies of Pelargonium produce in our gardens? All plants of the 21ſt, 22d, and 23d claſſes of Linné moſtly generate prolific hybrids. Linné wrote a particular treatiſe on hybrids, in which he attempted to explain the origin of ſome particular plants; but unfortunately he has given nothing but hypotheſes, his obſervations not according with experience.

'Should it not, from the obſervations made with regard to the hybrids of the animal and vegetable world, be laid down as a rule, admitting ſome exceptions, that all hybrids are productive, but that ſome only want a warm climate to unfold the male ſemen? I do not attempt to eſtabliſh this rule as quite certain; I ſhould be happy, on the contrary, would philoſophers conſider this ſubject more accurately, and attend more to the hybrids of different climates, on purpoſe to ſettle the point.

'But Koelreuter made ſome experiments which put the doctrine of *Epigeneſis* beyond all doubt. I ſhall only mention one of his obſervations as an inſtance. He obtained, as we have ſeen, a hybrid from Nicotiana *ruſtica* and *paniculata.* Nicotiana *ruſtica* was the female plant, *paniculata* the male. The hybrid, like all the others which he brought up, had imperfect ſtamens, and kept the middle between the two ſpecies. He afterwards impregnated this hybrid with Nicotiana *paniculata,* and got plants which much more reſembled the laſt. This he continued through ſeveral generations, till in this way, by due perſeverance, he actually changed the Nicotiana *ruſtica* into the Nicotiana *paniculata.* By thoſe and other experiments often repeated, and made in various ways, and upon other plants, it ſeems clearly eſtabliſhed, that there is no preformation in plants.

'According to the theory of *Epigeneſis,* then, the fluids of the male and female are mixed, and an offspring is obtained from theſe two, which, in form and properties, reſembles both father and mother.

'But there have been philoſophers, as well in former as at the preſent times, who in plants have altogether denied the exiſtence of ſexes. Smellie ſeems to favour this opinion, becauſe he repeated an experiment of Spallanzani's with a female plant of hemp, which he kept remote from all male plants, and, notwithſtanding, obtained, though in a ſmall quantity, perfect ſeeds; and hence he deduces his arguments. But indeed ſuch experiments are too difficult to be free from error, and who can aſſert that he has not, even with the greateſt attention, been deceived? Spallanzani placed his female plant in a room

'In tender plants, waſhing with water, or with the above decoction, is of great benefit; the fumes of tobacco likewiſe kill the inſects.

'*Rubigo*, or a red matter of the appearance of ruſt, is ſeen frequently on the leaves and ſtems of many plants. It conſiſts of yellow or brown ſtains, which when touched give out a powder of the ſame colour, which ſoils. Microſcopical examination has ſhown, that this ruſt-like matter conſiſts of ſmall fungi, which are called Aecidium, and the ſeeds of which form this browniſh powder. We find them frequently in the leaves and ſtems of Euphorbia *Cypariſſias*; Berberis *vulgaris*; Rhamnus *catharticus*; and ſome gramina; of wheat, oats, &c. If they are very numerous, eſpecially in the different ſpecies of gramina and corn, conſumption is the conſequence.

'Little is to be done againſt this affection. In the ſpecies of wheat, oat, and the like, ſome have recommended to moiſten the grain, before ſown, in ſalt or lime water, or to ſow grain from countries where this diſeaſe does not prevail. Palliatives, or preſervative means, are of no uſe.

'*Chloroſis* is that affection of plants, when their green colour entirely diſappears, and all their parts grow whitiſh. It ariſes from this circumſtance, that theſe plants cannot excrete their oxygen, which therefore becomes accumulated. There are three cauſes of the diſeaſe, want of light, inſects, and bad ſoil. We ſaw before that a healthy plant emits oxygen gas in ſun-light, and that the accumulation of this gas, when not emitted, makes the green colour diſappear.

'As ſoon as a plant is deprived of light, it cannot diſengage the oxygen; hence it aſſumes a white colour, which, however, inſtantly goes off, when the rays of the ſun are again admitted. This is the reaſon why plants, in dark rooms, between great maſſes of ſtone, in deep clefts of rocks, beneath the dark ſhade of ſhrubs and trees, &c. grow pale, and of a whitiſh colour.

'Inſects which bite off the radicles of plants, or even neſtle in them, and conſume their food, debilitate their veſſels, render them inſenſible of the ſtimulus of light, and at laſt chlorotic. It occurs very frequently in Secale *cereale*. No remedies are of any uſe.

'Improper ſoil, from which plants do not get food enough, not unfrequently brings on this affection. In ſuch caſes plants may ſometimes recover by change of ſoil.

'*Uſtilago*.—This ſingular variety of gangrene occurs moſt frequently in the ſpecies of gramina, rarely in other plants; ſometimes in Scorzonera, Tragopogon, &c. It ariſes from a ſmall fungus, which occupies the whole ear (*ariſta*), which therefore cannot form itſelf properly. Every part of it, on the contrary, becomes a black, ſoiling maſs. Moiſt ſeaſons are moſt favourable for it, and its progreſs is, under ſuch circumſtances, very rapid.

'That corn may not be affected with it, ſuch grain only ſhould be ſown which has not been kept in damp places, nor has been got from where the diſeaſe prevailed. Neither ſhould the grain be placed too deep in the ground, eſpecially where the ſoil is fat, and the ground moiſt. When, however, it has once begun, the plants diſeaſed cannot be cured. In tender and ſcarce garden plants, ſomething may be done by amputating the diſeaſed part juſt forming. But this would be an operation too troubleſome and precarious.'

The hiſtory of plants, which forms the ſubject of the 7th ſection, comprehends a view of the influence of climate upon vegetation, of the changes which plants have probably ſuffered during the various revolutions of the earth, of their diſſemination over the globe, of their migrations, and of the proviſions made by nature for their preſervation. This ſection contains many excellent obſervations and ingenious ſpeculations, which our limits forbid us noticing in this place.

The volume is brought to a cloſe by the hiſtory of the ſcience. We think highly of this hiſtorical ſketch, which is divided into eight epochs, viz. from the firſt origin of the ſcience till Brunfels; from Brunfels till Cæſalpinus, comprehending the period from 1530 to 1583; from Cæſalpinus till Bauhin, 1583 to 1593; from Bauhin till Tournefort, 1593 to 1694; from Tournefort till Vaillant, in 1717; from Vaillant to Linnæus, 1735; from Linnæus till Hedwig, 1782; from Hedwig till the preſent time, 1805.

It contains ſhort but inſtructive notices of the life and writings of every botanical author, with references to their works, which muſt prove highly uſeful to the ſtudent, who, left without ſuch aſſiſtance, is often at a loſs where to ſeek the information he wants.

VI.

Caſes of two extraordinary Polypi removed from the Noſe, the one by Exciſion with a new Inſtrument, the other by improved Forceps; with an Appendix, deſcribing an improved Inſtrument for the Fiſtula in Ano, with Obſervations on that Diſeaſe, illuſtrated with a Copperplate. By THOMAS WHATELY, Member of the Royal College of Surgeons in London. 8vo. 42 pp. 1805.

THE title ſufficiently beſpeaks the contents of this ſhort pamphlet, with which the reader may be gratified for the trifling expenſe of two ſhillings. He will perceive, too, that Mr Whately can ſtart game for himſelf, and that he no longer contents himſelf by poaching in ground which had juſt been courſed over by Mr Home. An obſervation we make for the benefit of thoſe who have invidiouſly remarked, that Mr Whately's eſſays ſo regularly followed thoſe of Mr Home on the ſame ſubject, that if the latter again publiſhed, they could, with tolerable confidence, foretell a counter treatiſe from the pen of the former.

The polypi, an account of which is given in the pamphlet now before us, were remarkable chiefly for their extraordinary ſize, and one of them for the extent and ſtrength of its attachment, which rendered all attempts to remove it by the forceps inſufficient, and by the ligature impracticable. Theſe, therefore, having failed, Mr Whately directed his attention to the exciſion of the polypus. There was not room ſufficient to admit the application of ſciſſars, as, after their introduction into the noſtrils, they could not be opened. In uſing the knife, the difficulty was to direct and confine its edge to the parts to be divided. The method ſucceſsfully employed by Mr Whately is very ingenious, and will, we doubt not, be found uſeful in other ſimilar caſes, where, from the ſituation of a tumour, the ſurgeon, in conducting his knife, can neither be aſſiſted by the eye nor touch.

A ligature was firſt paſſed in the uſual manner round the baſe of the polypus, and the ends brought out at both noſtrils; the knife, defended by a ſheath, which could be removed after its introduction into the noſtrils, had a hole at its point, through which one of the ends of the ligature was paſſed, the other end being held firm by an aſſiſtant; and in this way, it will readily be perceived, the knife could, by ſliding along the ligature embracing the tumour, be accurately applied to the part to be divided. 'The conducting thread being firſt paſſed round the polypus, and one end carried through the eye at the knife's point, it was then unſheathed; an aſſiſtant held one end of the thread, while I took hold of the other with my left hand, and began to cut the polypus. The operation was continued till the patient grew ſomewhat faint, through the loſs of blood. At this time Mr Ramſden, putting his finger into the patient's fauces, in order to aſcertain the ſtate of the polypus, felt the end of the knife; upon doing the ſame myſelf, I found that I had cut more than halfway through the polypus. I immediately proceeded, keeping the knife in the ſame direction in which it was introduced through the noſtril, and completed the exciſion.' The polypus now dropped into the patient's mouth, and was removed by the fingers.

A good deal of blood was loſt, but the hæmorrhage was ſoon ſtopped by the uſual means. The cut ſurface of the tumour, a few hours after the operation, meaſured at its broadeſt diameter two inches, and at its narroweſt an inch and three eighths.

By the ingenuity of Mr Whately, his patient was thus not only freed from an enormous polypus, which no force uſed with the forceps had been able to move, but relieved alſo from many diſtreſſing and dangerous ſymptoms which attended its growth. He had ſuffered repeated loſſes of blood; his reſpiration had been greatly affected; but chiefly remarkable both in this and in the other caſe related by Mr Whately, were the paroxyſms of drowſineſs and ſtupor to which the patients were liable, and by which they were rendered almoſt incapable of any buſineſs. The one was apt to fall aſleep while dreſſing himſelf, while ſerving cuſtomers in his ſhop, and, even while riding on horſeback, he was indebted to the good-natured paſſenger who ſtopped his horſe in the ſtreet to awaken him. The other, a hair-dreſſer, was ſtill more unlucky; he would fall aſleep while dreſſing a gentleman's hair, on whoſe devoted head the hot curling-irons have dropped from the unconſcious hands of the drowſy friſeur. 'He has been known likewiſe to fall aſleep while ſetting a razor, and has frequently let the razor drop on the floor, eſpecially when he has attempted to continue the employment longer than the ſetting a ſecond razor at one time.'

The obſervations on the fiſtula in ano are unimportant, if we except ſome remarks on certain inconveniences attending the crooked biſtoury, the difficulty of inſinuating its point into the orifice in the gut, in oblique ſinuſes, from the edge of the knife being unguarded during the examination; inconveniences which it is propoſed by Mr Whately to remedy, by guarding the biſtoury with a ſheath, which is to be removed after the knife is fairly introduced through the ſinus, and its point fixed with the finger in ano. Mr Whately's biſtoury has alſo a ſtout unjointed handle. 'It is in fact nothing more than a crooked biſtoury without a joint at the handle, having a ſheath attached to it by a ſcrew fixed at the place where, in the old inſtrument, the joint was ſituate.'

This inſtrument, armed with its ſheath, is to be introduced in the uſual manner. 'When the point of the knife is in contact with the operator's finger, an aſſiſtant, by a turn or two of the ſcrew, ſets the ſheath at liberty, and withdraws it immediately. The ſurgeon then finiſhes the operation.'

VII.

Elements of Galvaniſm, in Theory and Practice; with a Comprehenſive View of its Hiſtory, from the firſt Experiments of Galvani to the preſent Time: Containing alſo Practical Directions for conſtructing the Galvanic Apparatus, and plain ſyſtematic Inſtructions for performing all the various Experiments; illuſtrated with a great number of Copperplates. By C. H. Wilkinson, Lecturer on Galvaniſm in Soho-Square, Member of the Royal College of Surgeons, &c. 2 vols. 8vo. London. 1804.

Physiology, or the ſcience which embraces the general doctrines of organized or animated beings, the ſubjects of medical ſcience and of medical art, is inſeparably allied to all the others. The phenomena of life cannot be underſtood or explained without a previous knowledge of the general laws which govern every other part of the univerſe. Nor is this ſurpriſing, ſince organized beings, however characterized by their particular modes of exiſtence, are influenced by external agents, with which a conſtant and reciprocal action is maintained, and ſince their material elements ſpring from and return to one common ſource. Many of the phenomena of life, therefore, arrange themſelves under the laws of mechanical, a ſtill greater number under thoſe of chemical philoſophy, the application of which to phyſiology has thrown much light on the economy of particular functions. Every diſcovery in phyſical ſcience thus becomes important to the phyſiologiſt; and phyſicians naturally enough expect to find in it ſome elucidation of the animal functions, or ſome uſeful application of it in the cure of diſeaſes. Accordingly, no ſooner had Galvani made that happy diſcovery which bears his name, than attempts were made to raiſe, on the phenomena which had been obſerved, an hypotheſis which might ſolve the difficult problem of muſcular motion; and hardly were the powers of Volta's pile underſtood by phyſicians, when diſeaſe ſought relief from the Galvanic energy.

In every point of view, therefore, Galvaniſm has become cloſely connected with the healing art, and every practitioner would deſire to poſſeſs all the knowledge of this power which the rapid progreſs of diſcovery has unfolded. This knowledge, diffuſed through a great number of volumes in different languages, has been collected into one view by the induſtry of Mr Wilkinſon, who, it is well known, has dedicated much of his time to this new branch of ſcience. Many of our readers have, like us, witneſſed the effects of his very powerful apparatus, and been entertained by his brilliant experiments.

The volumes under conſideration contain a very full, and, we think, faithful analyſis of the different publications which have appeared on the ſubject of Galvaniſm; the hiſtory of the various diſcoveries made by the continental and Britiſh philoſophers, the different opinions and theories which have been entertained or propoſed, are ſtated and examined, while the principles of the ſcience are conciſely explained by our author.

Electricity Mr Wilkinſon conſiders as a principle univerſally, but not equally, diffuſed. All bodies contain more or leſs of it; and if no ſigns of electricity are apparent, it is becauſe all the ſubſtances contain preciſely ſuch a quantity of the fluid as is proportionate to their capacity. Different modifications of bodies, however, give occaſion to changes of their capacities for the electric fluid, which then becomes ſenſible, being given out by the body, if its capacity is diminiſhed, or flowing into it from other neighbouring ones, if its capacity be increaſed. Thus, when a cylinder or plate of glaſs is rubbed, its conſtituent parts undergo ſuch a change, that the reſiſtance to the admiſſion of electricity is diminiſhed, and the fluid is ſupplied to it by the ſurrounding air, and by the cuſhion, if it communicates with the earth by a conducting ſubſtance. Various other changes, both chemical and mechanical, to which bodies are ſubject, give occaſion to correſponding changes in their capacities, and to conſequent electrical phenomena. The heating and cooling of bodies, changes of compoſition, the rarefaction and condenſation of the atmoſphere, the evaporation and precipitation of aqueous fluid, the oxydation of metals, are illuſtrations of Mr Wilkinſon's theory of combined electricity. In theſe examples, the capacities of the bodies are changed, and the electrical fluid becomes apparent in its paſſage to and from them, according as their capacities are increaſed or diminiſhed.

As bodies differ in their capacities for caloric, ſo they differ from each other in their capacities for electricity.

The beſt conductors, Mr Wilkinſon thinks, contain the greateſt quantity of electricity, while thoſe are the beſt non-conducting ſubſtances which contain the leaſt.

Conducting bodies will give ſigns of electricity, if, by any change, their capacity is altered. Thus, a metallic ſubſtance which is a good conductor, when oxydated, is a very imperfect one; and, in paſſing to the ſtate of oxyde, electricity is given out. Water in the fluid ſtate is an excellent conductor; in freezing it gives out electricity, and becomes a non-conductor; converted into vapour, its capacity for electricity and its conducting power are both increaſed.

The diſtinction of two kinds of electricity, a vitreous and reſinous, or poſitive and negative, is rejected by Mr Wilkinſon. All the phenomena are referable to the motions of one fluid. When the capacity of a body is increaſed, and the electrical fluid moves towards it, we have ſigns of what has been called negative electricity; when a body is parting with electricity, of poſitive. Poſitive and negative electricity are merely relative proportions of the ſame principle.

On theſe principles, and on the reſiſtance oppoſed to the paſſage of the electric matter by the air, the electrical phenomena are explained with tolerable ſucceſs by Mr Wilkinſon. The theory of combined electricity, and of changing capacities, bears the ſtricteſt reſemblance, *mutatis mutandis*, to the modern doctrine, which ſo happily explains the motions and combinations of caloric, from which, indeed, the theory ſeems borrowed. It muſt be confeſſed that this theory embraces a greater number of facts than any other hitherto propoſed, and alone accounts for the electrical appearances which are manifeſted in a variety of chemical changes.

Though Galvaniſm and electricity be here conſidered as the ſame principles, Mr Wilkinſon is of opinion that, according to the preſent ſtate of our knowledge, they may be thus diſtinguiſhed:—' Galvaniſm is the portion of electricity which forms a component part of the conducting body, in the act of undergoing a change in its capacity from a greater to a leſs ſtate; while electricity is the reſult of a temporary change in non-conducting bodies, inſomuch that their capacities become, by attrition, momentarily increaſed. Galvaniſm is never produced by any changes in non-conductors, while electricity is accumulated by them alone.' We are not perfectly ſatisfied with the accuracy of this diſtinction; at leaſt there are ſome phenomena, commonly regarded as electric, which, by the terms of this definition, ſhould arrange themſelves under the Galvanic. Aqueous vapour, for example, is a conductor, and, in paſſing to the ſtate of water, its capacity is diminiſhed; yet the electricity which is given out during this change has never been conſidered as Galvanic.

With regard to metals, a ſimple Galvanic ſeries formed from them generally conſiſts of two, the one more oxydable than the other, with a moiſt ſubſtance interpoſed, or of a ſingle metal ſo placed as to have one ſubſtance only undergoing the proceſs of oxydation. Now, whenever a metal becomes oxydated, its capacity for electricity is diminiſhed; a portion of its combined electricity is given out; poſitive ſigns of electricity are evinced; and a ſenſible electrometer will be made to diverge with the ſame electricity as is produced by excited glaſs. In conſequence of the oxydation of one of the ſurfaces of the metal, its natural electricity becomes diſturbed, and the direction in which it will have a tendency to move will be towards that ſurface which is undergoing the change in capacity. 'If a plate of zinc be ſuppoſed to be divided into a number of lamina or ſtrata, the ſuperior ſtratum being thrown into a ſtate of readily parting with its combined electricity, and the ſucceſſive ſtrata being ſimilarly acted on, the electricity in the plate will be thrown into motion, and the direction will be from the oppoſite ſide of the plate towards the ſide which is undergoing a chemical change. In conſequence of this diſturbance, the ſide of the plate of zinc which is not expoſed to moiſture, or to the action of any fluid, will be in a negative ſtate; or, in other words, will contain leſs than its natural quantity of the electric fluid, while the other will be in a poſitive ſtate of electricity.

'When a conducting medium is placed between both ſides of a plate of zinc, then an equallization is effected. The ſurface under the chemical action of the fluid being freed of its exceſs of electricity, and the other ſide recovering its original ſtate, the oxydifying proceſs again goes on, and thus continues, ſo long as the metallic ore completes the circuit between the ſides.

'As zinc undergoes this change with ſo great a facility, in order to produce a perfect Galvanic combination, it is neceſſary to guard and defend one of its ſides from any change, by coating it with a metallic ſubſtance, the capacity of which for electricity is not ſo eaſily altered; ſuch as gold, ſilver, copper, &c. Theſe metals, when ſoldered to zinc, are not otherwiſe uſeful than becauſe they are leſs acted on by the fluid than the zinc would have been; and hence, as to the ſtate of electricity, they may be ſimply deemed to accord with the zinc ſurface with which they are united.'

What we have here quoted will be ſufficient to give our readers ſome notion of what may be called the chemical theory of the Galvanic pile, in oppoſition to the mechanical or motoelectric theory of Volta, which attributes the whole phenomena to the diſplacement of electricity by the ſimple contact of two diſſimilar metals, and conſiders the interpoſed fluid in the pile as performing the office of a conductor merely.

During the action of the Galvanic pile, it is certain that the chemical changes to which the evolution of electricity, in the former theory, is referred, are conſtantly going on, and that the production of the electric fluid is nearly proportionate to theſe changes. A ſtrong objection, too, to the Voltaic theory ariſes from the intereſting diſcovery of Mr Davy, that two metals are not neceſſary to the conſtruction of an efficient Galvanic ſeries; that a ſeries formed of plates of one metal only, ſo arranged that one ſide only of each plate ſhall ſuffer oxydation, while the other ſide is protected from change, ſets the electric current equally in motion. On the other hand, it is eſtabliſhed beyond the poſſibility of doubt, by the experiments of Volta, that if two diſſimilar and inſulated metallic plates be brought into contact, and afterwards ſeparated, they will be found to be differently electrified, the one poſitively, the other negatively. If copper and zinc be the metals employed, the zinc poſitively, and the copper negatively, ſo that the developement of the electric fluid is proved to be quite independent of any humid conductor, and conſequently of chemical change. When humid ſtubſtances are interpoſed, it is alſo well known that the oxydable metal is more rapidly oxydated in conſequence of the diſplacement of the electricity, occaſioned by the contact of the diſſimilar metals, than it would be if expoſed alone to the ſame chemical agent: and in every Galvanic ſeries, that the quantity of oxydation is proportionate to the force of the electric current developed by the apparatus.

It muſt be confeſſed, indeed, that we have no means of determining ſatisfactorily the priority of theſe two events; in the Galvanic battery, the oxydation of the metallic plates, and the developement of the electric fluid, are ſo perfectly ſynchronous.

While we admit the evolution of electricity as an effect of the oxydation of one ſide of the metallic plate, and conſequent change of its capacity, we are induced, from the experiments of Volta, from the hiſtory of the doublers of electricity, and from the more rapid oxydation of zinc expoſed to moiſture, in contact with another diſſimilar metal, than when expoſed alone to the ſame moiſture, to attribute the original diſplacement of electricity to the ſimple contact of diſſimilar metals or diſſimilar ſurfaces of the ſame metal, whereby the two metals, or the two ſides of the ſame metal, become differently charged. This is certainly true, at leaſt of diſſimilar metals; but when the ſeries is arranged with interpoſed humid ſubſtances by the oxydation of one of the metals, there is a greater developement of electricity in conſequence of this chemical change, ſo that the oxydation and the electrical current ſeem mutually to affect each other; a more rapid oxydation being cauſed by the electrical current, while the electricity itſelf is more rapidly evolved in conſequence of the oxydation.

The opinion of Volta, therefore, in ſo far as it ſuppoſed the interpoſed fluid in the pile to act merely as a conductor, is now aſcertained to be erroneous. Thoſe fluids produce the moſt active effects, which moſt powerfully act upon and oxydate the metallic ſubſtance; and the evolution of electricity is proportionate to the oxydation.

From an early experiment of Galvani, afterwards repeated by Humboldt, Aldini, Kellie, and others, it appeared that Galvanic combinations might be formed by animal ſubſtances alone; that ſtrong muſcular contractions are produced in the limbs of a prepared and inſulated frog, by the ſimple contact of its own muſcles and nerves, or when the arc between them is completed by other animal conductors; and that theſe contractions are occaſioned by the paſſage of electric matter from one of theſe organs to the other through the nerve. Theſe facts furniſhed materials for ingenious men to build a moſt abſurd theory of muſcular motion, and even of ſenſation. Our readers need not be reminded of the hypotheſis of Galvani, Humboldt, and De La Matherie, which later experiments and obſervations have ſo completely refuted.

The phenomena are eaſily explained on the principles of combined electricity, and the changing capacities of conducting ſubſtances, when their conſtituent elements undergo any new modification.

The ſeparated and prepared limb of a frog forms the moſt delicate electrometer; and its limbs are thrown into convulſions by the paſſage of the ſmalleſt power of electricity, by that minute portion even which is evolved by its own decompoſition, and ſet in motion on completing the circle between the muſcle and nerve.

'Animal ſubſtances,' Mr Wilkinſon well obſerves, 'as conductors of electricity, have their capacity proportioned to their conducting powers. No change can be induced in theſe ſubſtances without an adequate change in their capacities. Both the muſcular fibre and the nervous ſubſtance, in their healthy living ſtate, and connected with the ſources by which their energies are preſerved, are, with reſpect to electricity, in a preciſe balance with each other.' When a portion of animal ſubſtance is detached and ſeparated, changes are induced, and decompoſitions effected. In cold-blooded animals, the proceſs being very ſlow, the muſcular fibres remain for a long time ſuſceptible to ſo pervading a ſtimulus as electricity. When the ſubſtance is immerſed in a ſolution of the muriate of ſoda, the nervous and muſcular parts ſeem not to undergo equal changes. The part which is moſt rapidly acted on will leave the other in a negative ſtate of electricity, and, on the communication being formed, convulſions will be produced.'

This, which we conſider as the moſt ſatisfactory explanation of theſe curious and intereſting phenomena, appears to us very happily illuſtrated by the experiments of Dr. Kellie, with which, however, our author does not appear to have been acquainted.

Dr Kellie obſerved, 1*ſt*, 'That the prepared legs are often excitable by the detached leg of another frog, when no contractions can be produced by the contact of the muſcles and nerves of the prepared frog itſelf. 2*d*, That the ſame prepared frog may be excited by completing the arc between its muſcles and nerve by the ſeparated leg of one frog, and remain inſenſible to the application of the leg of another frog; or excitable by one piece of animal ſubſtance, and not by another, as by pieces of fiſh, beef, mutton,' &c. Whence he concluded, that when animal ſubſtances are employed to cloſe the circle between the nerve and muſcles of a prepared frog, they do not always perform the office of mere conductors, nor act in the ratio of their conducting powers. 3*d*, 'That when the prepared frog was immerſed under water, no effect took place on completing the arc between the muſcles and nerve, either immediately or mediately, by another animal conductor immerſed along with it *.' Theſe obſervations clearly demonſtrate, we think, that the electrical fluid is diſengaged by all animal ſubſtances during their decompoſition; that it exiſts in an unbalanced ſtate, ſometimes in the prepared leg itſelf, and ſometimes in the other animal ſubſtances employed to complete the communication; and that, in ſome experiments, it is poſitive in the one, and negative in the other; but that no accumulation can take place in the living ſubject, where no organs are provided for the purpoſe, and where the muſcles and nerves are every where connected, every where ſurrounded, by conducting ſolids and fluids.

After all the diſcoveries which have been made, there ſtill remains much difficulty in accounting for the phenomena of electric animals. The developement of electricity we eaſily comprehend; but we are ſtill at a loſs to account for its accumulation and diſcharge at the will of the animal. Many ingenious hypotheſes have been indeed ſuggeſted, but farther anatomical reſearches and additional experiments are ſtill wanting to enable us fully to underſtand the play of thoſe ſingular organs with which the electrical fiſhes are furniſhed. They bear, indeed, a ſtriking reſemblance to the Galvanic apparatus in the arrangement of parts; but every Galvanic ſeries becomes inactive when ſurrounded with fluids, or when all the pieces are connected by conducting media, by means of which the electric equilibrium is maintained. On this difficult ſubject, Mr Wilkinſon contents himſelf with obſerving, that 'on any action of the animal, the ſides of the cells having been brought nearer to each other, a change as to their ſtate of electricity reſults from their ſeparation.'

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* Diſsert. Inaug. de Elect. Animal. Auctore Georgio Kellie.—*Edin.* 1803.

After conſidering the phenomena of electric animals, Mr Wilkinſon indulges himſelf in ſome very ſingular ſpeculations on the functions of reſpiration and circulation, which we ſhall very ſhortly notice.

He begins by an examination of Dr Crawford's experiments and calculations, and, diſcovering in theſe ſeveral inconſiſtencies and errors, he concludes againſt the whole theory of that ingenious philoſopher. And from ſome calculations into which he enters on the quantity of heat which the oxygen conſumed in reſpiration can furniſh, compared with ſome experiments on the rapid cooling of water, he endeavours to demonſtrate, that this ſource is inadequate to the ſupport of animal temperature.

In ſhort, rejecting all the light which has been thrown on this important function by the diſcoveries of the Britiſh and French philoſophers, he conſiders reſpiration as a Galvanic operation, boldly repreſenting the lungs as an electric apparatus, drawing electricity from the air, and communicating it to the blood, which is thus enabled to ſtimulate the heart to contraction.

The cells of the lungs, he obſerves, 'are ſimilar in ſtructure to the electric organs of the torpedo, with this difference, that the electric charges of the pulmonary cells are enlarged by the pulſatory current of the blood, while the apparatus of the torpedo requires an external circuit.'

This reſemblance, however, is ſurely very remote. The lungs and the electric organs of the torpedo appear to us to have nothing in common but the name, by which their ſtructure is vaguely marked. Both, indeed, are ſaid to be cellular, a term very looſely employed by anatomiſts. To admit, without other proof, the electric charges of the pulmonary cells, is to beg the queſtion, unleſs, indeed, theſe charges can, as Mr Wilkinſon ſeems to ſuppoſe, be inferred from the obſervation of Volta and Read, that the air of expiration is negatively electrified. But the electricity of the air is modified by ſo many circumſtances, eſpecially where there is any change of compoſition, that no concluſion in favour of the hypotheſis can be legitimately inferred from that obſervation. It is perfectly independent of any organic proviſion made in the ſtructure of the lungs, farther than is neceſſary for completing thoſe chemical changes which the blood and air undergo, and of which the electrical ſtate of the expired air is the direct conſequence. The ſame philoſopher,

pher, Mr Read, who made the obſervation on the negative ſtate of electricity of the air of expiration, obſerved alſo that the air of dunghills was in the ſame ſtate; but no one would hence infer Galvanic ſtructures, or electric charges, in theſe maſſes of decompoſing matter.

'As fluids,' Mr W. continues, 'are but imperfect conductors for the weak intenſities produced by theſe proceſſes, nature has charged the venous blood with carbon, which being an excellent conductor, ſuperior, indeed, to any other connected with the air-veſſels, through this medium the electric charge paſſes; and being inſtantly conveyed to the heart, ſtimulates that muſcle to action.' This is being indeed very particular, and, we think, very fanciful. Without diſputing, however, the merits of the venous blood as an electric conductor, or inquiring how far, in this reſpect, it ſurpaſſes the arterial, it will be ſufficient, perhaps, to remark, that if nature have charged the venous blood with carbon, for the purpoſe here aſſigned by Mr Wilkinſon, her labour has been unqueſtionably thrown away. For, through the medium of this carbonated venous blood, the electric charge cannot paſs from the lungs to the heart, and ſtimulate it to action. When the blood has paſſed through the lungs, and has arrived at the left heart, it is no longer venous but arterial, and has loſt that charge of carbon on which its tranſcendent conducting power is ſuppoſed to depend. When the venous blood again arrives, after having paſſed the aortic circulation, at the right ſide of the heart, it cannot, on the terms of the hypotheſis, be ſuppoſed charged with the electric fluid derived from the air in its former paſſage through the pulmonary veſſels.

Here, indeed, for the firſt time, Mr W. ſeems to have been intoxicated with his ſubject, and miſled by the idols of his contemplation, *the idola ſpecus*, which, Lord Bacon informs us, take their riſe 'ex educatione, et conſuetudine, et fortuitis.' 'Adamant homines,' he continues, 'ſcientias, et contemplationes particulares; aut quia auctores et inventores ſe earum credunt, aut quia plurimum in illos operæ poſuerunt, iiſque maxime aſſueverunt. Hujuſmodi vero homines, ſi ad philoſophiam et contemplationes univerſales ſe contulerint, illas ex prioribus phantaſiis detorquent et corrumpunt.'

Still more ſingular and paradoxical will many of our readers deem Mr Wilkinſon's ſpeculations on the circulation of the blood. He denies that the red blood can paſs from the arteries into the veins in a healthy ſubject; nor can he be perſuaded that the colouring part of arterial blood again returns into the veins. The colour of the arterial is indeed different from the venous blood, and this change it may have undergone in the extreme branches of the arterial ſyſtem, before it enters the veins. But this does not appear to be our author's meaning.

'The arteries terminate in four different ways; the moſt common way is by branches, ſo very tenuous and minute as not to admit the red blood, and which are generally termed ſeriferous veſſels. Theſe veſſels ultimately unite with the origin of the veins. The ſecond mode of termination is into cells. The third is on the ſurface, where the exhalents are formed; and, fourthly and laſtly, the arteries enter the excretory ducts of the glands.'

The red globules of the arterial ſyſtem are, according to our author, entirely devoted to the reſtoration of the continual loſs of the ſyſtem, and to the formation of new parts. The opake blue purpliſh colour of venous blood is entirely derived from the chyle poured into it from the thoracic duct.

'Thus,' he concludes, 'the circulation is no way general, and the colourleſs part of the blood can alone be ſaid to undergo a regular circulating courſe.'

We will not anticipate the judgment of our readers on theſe ſtrange opinions of Mr Wilkinſon. The ſubphoſphate of iron, on which the colour of the blood depends, is found equally in the arteries and veins; the venous may be made to undergo the arterial change of colour, and the arterial the venous, out of the body; and obſervations on the circulation in the pellucid parts of animals render viſible the paſſage of coloured blood from the arteries to the veins.

To the phyſician, by far the moſt intereſting branch of Galvaniſm is, without doubt, its application to medicine. And our readers will be amply gratified by a peruſal of what Mr Wilkinſon has collected on this ſubject. In the firſt volume an account is given of the trials which have been made by the continental phyſicians of the uſe of it in the cure of diſeaſes; and, in the concluding chapter of his work, our author gives us the reſult of his own experience. His obſervations are delivered with becoming caution and much good ſenſe, without prejudice or ſuſpicious enthuſiaſm.

'In caſes of *paralyſis* from organic defect, or from preſſure on the brain, the ſtimulus of Galvaniſm is uſeleſs or prejudicial. But where loſs of motion and ſenſation ariſes from defective energy, it may be uſed with benefit. Though Mr Wilkinſon confeſſes he has never ſucceeded in reſtoring the patient to his original ſenſibility, he has, in many inſtances, conſiderably aſſiſted the powers of motion. And, in very diſtreſſing caſes, conſiderable relief has been obtained.

'An individual, aged 67, reſiding in London Street, and well known to many artiſts as an eminent clay figure-maker, had laboured under a paralytic attack nearly 18 months. All the uſual remedies, as well as electricity, had been tried in vain, inſomuch that, at the above period, he was ſo totally deprived of motion, that he could not riſe from his chair without aſſiſtance.

'He was brought to my houſe in a coach. For the ſpace of about a quarter of an hour I tranſmitted the power of about twelve plates through the forehead and the back of the neck. This mode of application was continued for three or four days; and the fluid made to paſs afterwards from the forehead through the affected arm. In leſs than a fortnight he had recovered the faculty of motion to ſuch a degree as to be enabled to walk from his own houſe to mine, a diſtance of at leaſt half a mile. In this ſtate he remained in a manner ſtationary; and although the Galvaniſm was ſtill continued for a month or ſix weeks, ſtill no perceptible change was obſerved to take place.

2. In caſes of deafneſs. Where this proceeds from defective energy of the auditory nerve, or from a relaxation of the membrana tympani, Galvaniſm has had good effects. In all other caſes it can do no good.

3. In amauroſis and weakneſs of ſight, Mr Wilkinſon obſerves, that he cannot ſpeak ſo favourably as in caſes of deafneſs. He has tried it both in incipient amauroſis, and in the completely formed gutta ſerena, without any benefit whatever.

4. In ſpaſmodic affections, and in caſes where there is a defect of motion or want of action, Mr Wilkinſon has been more ſucceſsful.

'In involuntary actions of the muſcles, I know of no remedy ſo efficacious as Galvaniſm. In a contracted ſtate of the fingers or hands, however clenched, on the application of this principle for the ſpace of a few minutes, it rarely fails to induce a relaxation. In caſes of cramp, if of long continuance, and even tetanus or locked jaw, it has afforded relief in a ſhort ſpace of time. In contractions of the joints, and in all caſes of rigidity, it will be found a very advantageous ſtimulus, which will greatly contribute to the reſtoration of motion.'

In lameneſs from gout, it has been attended with the happieſt effects. Mr Wilkinſon has alſo found it extremely uſeful in the diſcuſſion of indolent tumours and ſcrofulous ſwellings.

5. In caſes of mental derangement, two inſtances of the good effects of Galvaniſm have been adduced by Aldini; but, in theſe diſeaſes, Mr Wilkinſon himſelf does not appear to have had any experience.

In ſome diſtreſſing female complaints, nervous headachs and the like, he has derived, however, great advantage from the employment of Galvaniſm.

6. In ſuſpended animation, the effects of Galvaniſm deſerve to be tried; but in theſe caſes experience ſeems ſtill wanting.

VIII.

A Clinical Hiſtory of Diſeaſes, Part Firſt, being, 1. *A Clinical Hiſtory of the Acute Rheumatiſm.* 2. *A Clinical Hiſtory of the Nodoſity of the Joints, read to the Literary and Philoſophical Society of Bath.* By JOHN HAYGARTH, M. D. F. R. S. London & Edinburgh. 168 pages 8vo. London. 1805.

THE real ſchool for the practical phyſician is the bedſide of the patient. It is there that many men deficient in ſcientific knowledge acquire at laſt, and ſometimes with juſtice, the reputation of being good practitioners. It is there that all muſt correct the information derived from ſtudy. It is there that we muſt aſcertain the value of ſpeculative opinions. Indeed, it is there only that uſeful theories can be formed by legitimate induction from facts. Unfortunately, however, for the advancement of medical ſcience, much of the valuable knowledge thus obtained cannot be communicated to others, and by far the greateſt number of thoſe who poſſeſs extenſive opportunities for obſervation either neglect them entirely, or do not condeſcend to diſſeminate the information they have derived from them beyond the immediate circle of their friends. In every large town there are profeſſional men in extenſive practice, who hurry from patient to patient, who write an old preſcription becauſe it is familiar to them, or a new one becauſe it is faſhionable, receive their fees, and think no more of their patient or his diſeaſe. That the public ſhould ſuppoſe ſuch men poſſeſſed of much experience is a natural miſtake; but it is our duty to controvert the abſurd idea, too prevalent among profeſſional men themſelves, that it is neceſſary to ſee very many patients to become an experienced practitioner, or that, in walking the wards of a crowded hoſpital, much practice is to be ſeen. On the contrary, a limited practice is moſt favourable for reflection and profeſſional improvement. A multitude of patients only ſerves to diſtract the ſtudent, and to confound him; and the remarkable caſes, which he may never again meet with, attract his whole attention, and lead him to neglect thoſe common diſeaſes which, in future, it will be his chief employment to cure. But, even with the moſt favourable opportunities, the acquiſition of perſonal experience is tedious, troubleſome, and difficult. It occupies the beſt part of our lives. We muſt immediately record whatever we obſerve; and when we have obtained a ſufficient number of obſervations, it is neceſſary to arrange them, and laſtly to generalize the facts, uninfluenced by hypothetical opinions. How much then muſt we conſider ourſelves indebted to thoſe public-ſpirited individuals, who add to all theſe labours the trouble of reducing them to a ſtate intelligible to others, and of attempting to bequeath to their ſucceſſors the fruits of their experience! With the feelings of gratitude ſuggeſted by theſe conſiderations, we now proceed to give ſome account of the volume before us.

Dr Haygarth has long been in the habit of recording, in the patient's chamber, a full and accurate account of every important ſymptom, the remedies which were employed, and, when an opportunity offered, the effects which they produced. In this manner he has noted and claſſed the caſes of 10,549 patients, among the higher and middle ranks of ſociety, from 1767 to 1801 incluſive, and from theſe records he has ſelected acute rheumatiſm and the nodoſity of the joints as the firſt ſubjects of publication; the latter, becauſe it has not hitherto been particularly deſcribed, and the former, for the purpoſe of recommending the Peruvian bark in preference to all other remedies.

> 'The term Rheumatiſm, both in common and medical language, includes a great variety of diſorders, which ought to be diſtinguiſhed from each other by different names. After ſeparating from it the nodoſity of the joints, tic douloureux, ſciatica, lumbago, and other diſeaſes, which noſologiſts have placed under this denomination, there ſtill remain 470 caſes of rheumatiſm. This diſeaſe is generally claſſed with fevers, and yet only 170 (about one-third of them) had any fever. Theſe laſt are the caſes which come under the title of acute rheumatiſm, and excluſively form the ſubject of the following pages.'

After deſcribing the rheumatic fever, and explaining his tabular view of theſe 170 caſes, he proceeds to the inferences which may be drawn from them. As theſe contain the reſult of his whole experience, we ſhall ſtate them in as few words as poſſible. More males were attacked with acute rheumatiſm than females, in the proportion of nearly four to three. It affects all ages from below five to above 60, more commonly from five to 30, but moſt frequently from 15 to 20. No part of the year is exempt from this malady, but the colder ſeaſon is more liable than the warm, nearly as ſeven to five. The principal cauſe is expoſure to cold and moiſture. With regard to the *latent period* or time which elapſed between expoſure to the cauſe and appearance of the diſeaſe, out of 21 caſes only four exceeded the period of 48 hours. The ſhorteſt time noted is half an hour; but Dr Haygarth believes that the cauſe and effect are ſometimes connected together without any interval of perfect health. Perſons who have been previouſly affected with acute or chronic rheumatiſm, gout, or ſore throat, are moſt liable to this diſeaſe. The concomitant diſeaſes, which occurred moſt frequently, were delirium in 16 caſes, miliary eruptions in ten, catarrh in eight, ſyncope five, quotidian four, diarrhœa four, and gout three. Out of 170 caſes, one or more joints were affected in 154; both joints and muſcles in 33; and, in nine, muſcles only. In 80 caſes both pain and ſwelling are deſcribed, in 17 pain only, and in four ſwelling only; in nine only is redneſs deſcribed. By theſe omiſſions, Dr Haygarth does not imply that theſe ſymptoms were not preſent in other caſes; and indeed in two only is it mentioned that there was no ſwelling. In the ſame manner, both chills and ſweats are noted only in 52 caſes, chills alone in 11, and ſweats alone in 33; but two caſes only are noted where there was no chill, five where there was no ſweat, and ſix where there was no fever. The appearance of the urine is noted in 30 caſes only; in 26 its ſediment was red, in three there was no ſediment, and in one black from the preſence of blood. Dr Haygarth here ſuggeſts the importance of diſcovering chemical teſts, by which gouty urine might be diſtinguiſhed from rheumatic. Out of 93 caſes, only five had a pulſe below 72; in 47 the number was from 84 to 107, and in 29 it was from 108 to 130. In 31 caſes the blood drawn had an inflammatory cruſt, in three ſcarcely any, and in one none at all. Two caſes attended with vomiting are noted, and one where the rheumatiſm was tranſlated to the ſtomach. The rarity of ſuch a connexion, in Dr Haygarth's opinion, confirms rather than refutes Dr Cullen's opinion, that the ſtomach was not affected by rheumatiſm, but only by gout.

Theſe are valuable facts with regard to the hiſtory of this painful diſeaſe; but we muſt expreſs our regret that he has withheld from us the information which we ſhould have derived from the addition of a column to his table N° I. expreſſive of the time which elapſed between his firſt viſit and the termination of the diſeaſe. The objections to its inſertion, ariſing from want of room, might have been removed by marking the ages of patients of both ſexes in one, inſtead of diſtinct columns.

As profeſſional men, we feel a pleaſure in quoting Dr Haygarth's account of the manner in which he firſt became acquainted with the uſe of cinchona in rheumatiſm.

> 'It was before intimated that the chief purpoſe of this clinical hiſtory of the acute rheumatiſm is to explain why, in what manner,

and with what effect, I have employed the Peruvian bark, or cinchona, as a remedy for this fever.

'For ſeveral years after the period when I commenced the practice of phyſic at Cheſter, that excellent phyſician, the late Dr John Fothergill, uſed annually to retire from the fatigues of his profeſſion, during about two months in ſummer, to Lea-Hall in Cheſhire. In this pleaſing rural retreat, I had frequently opportunities to enjoy his very improving and entertaining converſation. He allowed me the very important privilege of ſtating to him the doubts and difficulties which often perplexed me as a young phyſician. With a truly liberal and enlightened mind, he freely and generouſly communicated to me his opinion and advice, whenever he was thus conſulted.

'In one of theſe friendly viſits I ſolicited his counſel for a patient ill of a rheumatic fever. He recommended that the Peruvian bark ſhould be adminiſtered. At this advice I expreſſed great ſurpriſe; that it was directly contrary to the mode of treatment which I had been taught by the moſt judicious and learned authors and profeſſors; and that I had always underſtood the bark to be highly improper in all inflammatory diſorders.

'To my objections he replied, that 'when I was a young phyſician, 'being twice called out of my bed to viſit patients in a froſty night, 'I caught a very ſevere rheumatic fever. By the advice of my medi'cal brethren I had been blooded repeatedly and largely, even to 70 'ounces. My diſeaſe yet remained unſubdued, and my blood ſtill 'exhibited an inflammatory cruſt. Hence I was convinced that the 'method of curing this fever by ſuch copious evacuations was erro'neous. Soon after my recovery, I was deſired to viſit a patient ill 'of an acute rheumatiſm. At my requeſt, Sir Edward Hulſe, at that 'time the moſt eminent phyſician in London, was conſulted. He pro'poſed that we ſhould order the Peruvian bark. I gladly agreed to the 'propoſal, as I thought there were ſeveral analogies between an ague 'and a rheumatic fever. In both diſeaſes, the urine lets fall a ſimilar 'lateritious ſediment. In intermittent as well as rheumatic fevers, the 'blood, when let, is covered with an inflammatory cruſt. The pain 'and fever of rheumatiſm have certain periodical, though not quite re'gular, paroxyſms and intermiſſions.

'In this conſultation with Sir Edward Hulſe, the bark was given 'with ſuch manifeſt advantage, that I have ever ſince adopted the 'practice in this diſeaſe, and recommend it to you, in ſpite of all me'dical authorities to the contrary.'

He then gives a ſhort hiſtory of the progreſs of the practice of giving cinchona in acute rheumatiſm by Morton, Hulſe, and Fothergill. Thirty-five years have elapſed ſince he himſelf firſt preſcribed it, at firſt with great caution, but taught by attentive obſervation and ſucceſsful experience, with more and more freedom, and with more manifeſt proofs of its ſafety and efficacy. If the caſes be arranged in the order in which they occurred, by ſimply inſpecting the table, we ſee that it daily became a greater favourite. Of 170 caſes, it was exhibited in 121; and, in the laſt half of his practice, in no fewer than 76 of 85. In theſe 170 caſes, twelve terminated fatally, either by a tranſlation of the inflammation to the brain, lungs, ſtomach, or ſome other vital part, or as being found in combination with other diſeaſes. But only four of theſe twelve had taken the bark; ſo that, in Dr Haygarth's practice, one in ſix of thoſe who did not take cinchona died, and only one in 30 of thoſe who did. From the hiſtory of theſe fatal caſes, it is evident that the bark did not aggravate a ſingle ſymptom. Indeed, in four examples only did it fail to produce manifeſt ſalutary effects on its firſt exhibition; and, even in three of theſe, it was of ſervice, after proper evacuations by the lancet, leeches, and antimony. All theſe untoward caſes are candidly detailed, while only two of the examples of its ſucceſsful exhibition are given; but the general ſucceſs of his practice is thus ſtrongly ſtated:

'To ſum up the whole in a few words. After the ſtomach and bowels have been ſufficiently cleanſed by antimony, I have, for many years, begun to order the powder of the Peruvian bark in doſes of gr. v. x. or xv. every two, three, or four hours; and if this quantity had a ſalutary effect, it was gradually increaſed to gr. xx. xxx. or xl. with ſedulous attention never to add more than what perfectly agrees. It has generally been taken in milk, mint water, or the decoction of bark.

'With the exception of the few caſes above noticed, the bark has uniformly produced the moſt ſalutary effects. The pains, ſwellings, ſweats, and other ſymptoms of inflammatory fever manifeſtly and ſpeedily abate, and gradually ceaſe, till health is perfectly reſtored.

'Dr James Currie, in his Medical Reports, p. 431. obſerves that 'the inflammatory rheumatiſm is one of the moſt tedious and intractable of diſeaſes.' This remark of a phyſician of ſuch extenſive experience and medical knowledge deſerves particular attention. It proves the value of an inquiry which attempts to diſcover a ſafe and certain remedy for ſuch a malady.

'Another circumſtance merits great attention. When the rheumatic fever has been treated by bleeding, leeches, ſudorifics, &c. it is well known that pains of the diſeaſed joints and muſcles often afflict the patient for many months, or even years. In my clinical reports I find no inſtance of this kind, and have reaſon to think that the bark entirely prevents this cauſe of the chronic rheumatiſm as a conſequence of the inflammatory fever.

'Except mercury in the ſyphilis, there are few or perhaps no examples where a remedy can produce ſuch ſpeedy relief and perfect recovery in ſo formidable a diſeaſe. For many years I have been thoroughly convinced that the Peruvian bark has a much more powerful effect in the rheumatic than any other fever; and that it does not even cure an ague ſo certainly and ſo quickly.'

The ſecond part of this volume is dedicated to a clinical hiſtory of the Nodoſity of the Joints, an affection which has hitherto paſſed under the name of gout or rheumatiſm, but which, in order to render it a more direct object of medical attention, Dr Haygarth thinks, ought to be conſidered as a diſtinct genus.

'In this diſeaſe the ends of the bones, the perioſteum, capſules or ligaments, which form the joint, gradually increaſe. Theſe nodes are not ſeparate tumours, but feel as if they were an enlargement of the bones themſelves. This point might be anatomically aſcertained without any difficulty or doubt.

'Theſe diſeaſed joints generally ſuffer pain, eſpecially at night, but in a leſs degree than might be expected from ſuch a conſiderable morbid change. They often feel ſore to the touch. In one caſe the patient was attacked with ſevere ſpaſmodic pains. As the diſeaſe increaſes, the joint becomes diſtorted, and perhaps, in bad inveterate caſes, even diſlocated; its motion becomes gradually more injured. In a few patients a crackling noiſe was perceived in the joint, when in motion, particularly in the neck. The ſkin ſeldom or never appears inflamed.

'There is one diſtreſsful circumſtance which diſtinguiſhes this diſeaſe. It has no intermiſſion, and but ſlight remiſſions. For, during the remainder of the patient's life, the nodes gradually enlarge, impeding more and more the motion of the limb. The malady ſpreads to other joints, without leaving or producing even any alleviation in thoſe which had been previouſly attacked.'

Dr Haygarth met with this affection in 34 out of 10,549 patients, 33 of whom were women; and of theſe 33 it affected only three during the period of regular menſtruation. It affected principally the fingers, hands, and wriſts; and the moſt common date of its commencement was when the patients were between 50 and 60 years of age.

'The nodes appear moſt nearly to reſemble gout. Both of them are attended with pain and ſwelling of the joints; but they differ eſſentially in many diſtinguiſhable circumſtances. 1. In the gout, the ſkin and other integuments are generally inflamed with pain, which is often acute, ſoreneſs to the touch, redneſs and ſwelling of the ſoft parts, but in no reſpect like the hardneſs of bone. 2. The gout attacks the patient in paroxyſms of a few days, weeks, or months, and has complete intermiſſions at firſt for years, but afterwards for ſhorter periods. 3. The gout attacks men much more frequently than women.

'Theſe nodes are clearly diſtinguiſhable from acute rheumatiſm, becauſe they are not attended with fever. The tumour of the joints is much harder, more durable, and leſs painful in the former than the

latte

latter diſeaſe. The nodes are totally different from chronic rheumatiſm, becauſe the latter chiefly affects the muſcles, and is ſeldom attended with any ſwelling of the affected parts.

'In two or three caſes, the nodoſity appeared to alternate with a colic of the ſtomach, *gaſtrodynia;* and in one inſtance with an *aſthma.* If theſe few examples of the tranſlation of the diſeaſe to and from the viſcera be confirmed by future obſervations, they would prove that the nodes were in their nature more allied to gout than rheumatiſm.

'They bear a nearer analogy to the former than the latter diſeaſe in another circumſtance. They more commonly attack perſons in the higher and middle, than in the loweſt claſs of life. However, it is not excluſively a diſeaſe of any rank. I have ſeen it, though ſeldom, among the patients of the Cheſter Infirmary. But this remark is founded on general recollection, not an induction from facts, as I have not yet claſſed the caſes of theſe patients under their proper genera; otherwiſe the comparative frequency of the diſeaſe might be accurately aſcertained.

'I do not recollect that, in caſes of nodes, any notice is taken of that pink-coloured ſediment in the urine which appears in gout, or in acute rheumatiſm.'

Of the various remedies employed, Dr Haygarth informs us, that, as far as his experience extends, 'moſt benefit was derived from the warm bath and a ſtream of warm water, with repeated application of leeches on the diſeaſed joints.'

We have tranſcribed the greateſt part of Dr Haygarth's deſcription of this inſidious diſeaſe, with the view of aſſiſting him in exciting the exertion of medical men to prevent, if poſſible, ſo diſtreſsful a malady at its commencement. It has fallen more than once under our own obſervation, but we always conſidered the nodoſities as a conſequence of rheumatiſm, and the malady as incurable, ſo far at leaſt as the altered ſhape of the bones was concerned. From this neglect, we are at preſent unable to make, with confidence, any obſervations on or additions to Dr Haygarth's hiſtory of this diſeaſe; but we believe that, in a ſlight degree, it is much more frequent than he has ſtated it to be; at leaſt we remember an excellent anatomiſt of this city having pointed out to us in his collection a variety of bones, particularly tibias and fibulas, of which the extremities ſeemed as if they had been enlarged and ſoftened, and had yielded to preſſure, and which he had picked up in his diſſecting-room in the courſe of a few months, after one remarkable example had attracted his attention to the circumſtance.

IX.

Anſwers to all the Objections hitherto made againſt the Cow-Pox. By Joseph Adams, M. D. Phyſician to the Small-Pox Hoſpitals, and Author of Obſervations on Morbid Poiſons. 8vo. 1s. or 26 for L. 1. 1s. Publiſhed by Johnſon for the benefit of the Hoſpital.

The objections againſt vaccination being much ſtronger among the public than the faculty, this pamphlet is written in a popular ſtyle, diveſted of all technical language. The arguments, however, are not leſs ſyſtematically arranged. The objections, the author conceives, may be reduced to three. *1ſt*, That vaccination is no ſecurity againſt ſmall-pox; *2dly*, That it is only a ſecurity for a time; *3dly*, That, with the cow-pox, other humours are introduced.

The great ſucceſs that has attended vaccination has effectually ſubdued the firſt. The ſecond ſtands on no analogical ground to ſupport it, excepting ſuch as may be applied to ſmall-pox, whether in the inoculated or caſual mode, as inſtances are produced in which the ſuſceptibility to the diſeaſe has occurred after both.

As to the laſt, the author inquires—Are theſe humours derived from the perſon or the cow? If from the former, are we not expoſed to the ſame under inoculation for the ſmall-pox? If from the latter, how happens it that our Engliſh dairy-maids, univerſally celebrated for rude health, are thoſe who are moſt liable to the diſeaſe, and in whom it was firſt diſcovered? It is further ſhown, that theſe caſes of ſubſequent eruptions and abſceſſes are more common after inoculation for ſmall-pox, and ſtill more ſo after the diſeaſe in the caſual way. Inſtances of this, on all theſe points, are given from authentic records publiſhed before cow-pox was practiſed.

On the whole, we truſt this publication will prove the means of ſatisfying many an aching heart, which may at preſent be under apprehenſions from having vaccinated its darling child.

X.

Pharmacopœia Collegii Regii Medicorum Edinburgenſis. 12mo. Edinburgh. 1805.

The period of a year ſcarcely elapſed after the publication of the ninth edition of the Edinburgh Pharmacopœia, until the impreſſion was exhauſted. In it the firſt attempt was made to effect a complete reform of language of materia medica pharmacy on general ſcientific principles. Indeed, it was formerly ſo barbarous and heterogeneous, that the editors of every modern pharmacopœia have endeavoured to improve it. But differing in their ideas of the extent to which it ſhould be carried, and being guided by their own peculiar opinions, without any general principle, as many pharmaceutic dialects have been produced as there have been Pharmacopœias publiſhed. The evils reſulting from this variety of nomenclatures, and from this conſtant fluctuation of names, imperiouſly demanded a reform on general principles, which, if univerſally acknowledged, would render the language of materia medica and pharmacy uniform, ſteady, and univerſal. This was the object which the Edinburgh College hoped to attain by adopting, in their fulleſt extent, the improved languages of the ſciences of natural hiſtory and chemiſtry, of which, in fact, materia medica and pharmacy are but branches. To this attempt many objections have been made, both by thoſe who underſtood and thoſe who did not underſtand the ſubject. The latter only ſerved to expoſe the ignorance of their authors, while the former have a direct tendency to accelerate the univerſal adoption of the reform they were intended to oppoſe. That a firſt attempt ſhould be perfectly ſucceſsful was not to be expected; but until the general principles, that the names of compound medicines ſhould expreſs, as correctly as poſſible, the nature of their compoſition, and that the names of ſimples ſhould be the ſame with thoſe already appropriated to the ſame ſubſtances in natural hiſtory and chemiſtry, be refuted, well-founded objections to particular titles will only lead to the introduction of better. Thus, ſince the firſt publication of the ninth edition of their Pharmacopœia, either the criticiſms of others, or their own more mature reflections, have ſuggeſted ſo many alterations and real improvements, that the preſent is in fact a new edition, although they ſeem to wiſh that it ſhall only be conſidered as a new impreſſion.

'Pharmacopœiam noſtram nuper editam, cum iterum prelo ſubjicere voluerunt bibliopolæ, eam quâ potuerimus curâ denuo retractavimus, et mendas quaſdam, quæ forte irrepſerunt, lubentes correximus.'

Of theſe alterations we ſhall endeavour, both for the ſake of the purchaſers of the former impreſſion, and to mark the progreſs of the ſcience, to give ſome account. To the liſt of the materia medica they have added folia aſari Europæi, formerly omitted by miſtake, carbo ligni, and ſulphas barytæ: on the contrary, they have rejected from it the herba anthemidis nobilis, the folia, flores, aqua ſtillatia, et oleum volatile florum, et fructus immaturus citri Aurantii, mel, et oleum fixum myriſticæ moſcatæ vulgo oleum macis. They have, on many occaſions, improved the arrangement of the ſynonimes, and the form of printing this liſt. In conformity with their general principle, they have referred amylum to triticum, from which it is always obtained; but they contented themſelves with indicating the callicocca ipecacuanha as the plant furniſhing the officinal ipecacuan, the garcinia cambogia and ſtalagmitis cambogiodis as affording gamboge, and the eucalyptus reſinifera as the tree from which kino is at preſent obtained, a ſubſtance which is no longer erroneouſly called a gum-reſin. They have very properly marked the diſtinction between the proper ſolid reſins, and reſinous fluid juices, which are probably a compound of reſin and volatile oil, ſuch as the amyris Gileadenſis, copaifera officinalis, and the genus pinus, yield, by denominating the latter reſinæ liquidæ. The view of the products of the laſt genus is the neateſt and moſt inſtructive we have ever ſeen: to prevent repetition, however, under each ſpecies, they have introduced, in its alphabetical place, the reſina pini, which they deſcribe to be reſina ex variis pinis, oleo volatile privata, and as ſynonimous with the reſina alba of their former editions. They have corrected the error they have, in common with other Colleges, hitherto committed, in deſcribing ſparmaceti as the ſevum phyſeteris macroſephali, and have cautiouſly ſaid that it is '*materia* in cranio reperta;' although we think they might have adopted Fourcroy's generic name for ſimilar ſubſtances, *adipocera.* They have alſo properly corrected *gummi-reſina* guiaci officinalis into *reſina*, and they have introduced carbonas plumbi as a ſynonime of oxidum plumbi album, as it is commonly carbonated.

The improvements of the ſecond part are equally great. They have diminiſhed the numbers of that miſcellaneous collection of preparations called medicamentorum quorundam ſimplicium præparationes, by referring moſt of them to their proper places. They have made a ſeparate chapter of the *Mucilagines*, and have placed among the calcareous preparations the aqua calcis and potio cretacea, all of which were formerly improperly claſſed with the infuſa. The oleum lini cum calce is now entitled linimentum aquæ calcis, and placed among the liniments. In the former edition, the aromatic cloves were in one place deſcribed as the fructus, in another as the pericarpium immaturum, and in the materia medica as the floris germen caryophylli aromatici; which laſt deſignation is now uniformly adopted. We may here, however, mention that this is the only inſtance in which the College have deviated from Willdenow's edition of Linnæus, in which this tree is referred to the genus Eugenia with the trivial name caryophyllata. In the preceding edition, the oleum terebinthinæ puriſſimum was ordered to be prepared from oleum terebinthinæ, although the latter title was not to be found in the liſt of materia medica. Oleum pini volatile is now uniformly employed. The great length of the titles of compound medicines having been complained of, the College have endeavoured to abbreviate them, but according to fixed principles. They have conſidered it as unneceſſary to introduce into the title the part of the plant uſed, unleſs to diſtinguiſh two different ſubſtances, as unguentum *pulveris* et unguentum *infuſi* meloës veſicatorii. When there are two active ingredients, the names of both are introduced into the title, as *pulvis ipecacuanhæ et opii*; where more than two, or the ſecond ingredient is leſs important, the title conſiſts of the name of the moſt active, with the adjective *compoſitus*, as, ſpiritus lavandulæ *compoſitus*, pulvis jalapæ *compoſitus*. When only one ſubſtance is mentioned in the title, both its ſpecific and generic name are introduced, as extractum *caſſiæ ſennæ*; when two, or where *compoſitus* is added, either the generic or ſpecific names are omitted, that which is moſt characteriſtic only being retained, as infuſum *tamarindi cum ſenna*, infuſum *gentianæ* compoſitum. In many inſtances they have changed the copulative *cum* with advantage for *et*, but not uniformly. *Et* ſhould always be uſed when both ſubſtances undergo the ſame preparation; *cum* only when the latter ſubſtance is added to a preparation of the former. Thus *infuſum tamarindi* cum *ſenna* ſuggeſts the idea that ſenna in ſubſtance is added to an infuſion of tamarinds, whereas it is an infuſion of tamarinds and of ſenna, *et ſennæ*.

Throughout, the directions to the apothecary are rendered more full and preciſe, by mentioning whatever preliminary proceſſes the ingredients muſt undergo, as, whether they are to be bruiſed, raſped, or powdered, and alſo whether the whole quantity is to be added at once or gradually. In the old formula for making mercurial ointment, the quickſilver is merely directed to be rubbed with the axunge and ſuet until it be killed, which would be almoſt impoſſible; whereas it is now more properly directed that the quickſilver ſhould be killed with a little of the axunge. Some formulæ are ſtill more materially improved. The *unguentum nitratis hydrargyri*, which was formerly prepared with axunge alone, and ſoon became hard and friable, is now made with nine parts of olive oil, and only three of axunge.

The following receipt for preparing the Benzoic acid is taken from the Pruſſian Pharmacopœia.

‘ ACIDUM BENZOICUM.

‘ ℞. Balſami Styracis Benzoin uncias viginti quatuor,
Carbonatis Sodæ uncias octo,
Aquæ libras ſexdecim.

‘ Balsamum cum carbonate tritum, ex aqua decoque aſſidue agitans per horam dimidiam, et cola. Balſamum reſiduum ex aliis aquæ libris ſex decoque et cola. Colaturam hanc cum priori miſce et vapora, donec ſuperſint libræ duæ. Iterum cola et inſtilla, quamdiu fiat præcipitatio,

Acidum ſulphuricum dilutum.

‘ Acidum Benzoicum præcipitatum in aqua bulliente ſolve. Liquorem adhuc ferventem cola per linteum et ſepone ut cryſtalli formentur. Cryſtallos collectas, aquâ frigidâ ablutas, ſicca et ſerva.’

By this proceſs, the acid is obtained in much larger quantity than by the former proceſs by ſublimation, and totally free from empyreumatic oil.

Cryſtallized Benzoic acid is ſo extremely elaſtic, that it can ſcarcely be reduced to a fine powder: for ſome purpoſes it is therefore better not to rediſſolve and cryſtallize the acid, as firſt obtained by precipitation.

In the former edition, the muriate of barytes was directed to be prepared from the ſulphate, as being the ſtate in which it is moſt commonly found. Mr Goettling has lately propoſed the addition of muriate of ſoda as an improvement of the proceſs there recommended. It acts as a flux, and renders a ſmaller proportion of charcoal neceſſary; one part of charcoal, and two of muriate of ſoda, being ſufficient to decompoſe ſix of ſulphate of arytes.

When, however, carbonate of barytes can be obtained, the muriate is prepared much more eaſily, according to the following formula now firſt inſerted:

‘ ℞ Carbonatis barytæ
Acidi muriatici, utriuſque partem unam,
Aquæ partes tres.

‘ Aquæ et acido miſtis adde carbonatem in fruſtula contuſum. Effervescentia finita digere per horam, dein cola, et poſt idoneam vaporationem, ſepone ut cryſtalli formentur. Repetatur vaporatio quamdiu formatæ fuerint cryſtalli.’

The proceſſes for preparing aqua ammoniæ and alcohol ammoniatum are alſo greatly improved.

‘ AQUA AMMONIÆ: olim, AQUA AMMONIÆ CAUSTICÆ.

‘ ℞. Muriatis ammoniæ libram unam,
Calcis recentis libram unam cum ſemiſſe,
Aquæ deſtillatæ libram unam,
Aquæ uncias novem.

‘ IN vaſe ferreo vel figulino calci contuſæ affunde aquam, vas operito donec calx, in pollen dilapſa, friguerit; dein muriatem in pulverem tenuiſſimum tritum, cum calce terendo in mortario permiſce, et protinus retortæ ex vitro viliore *(bottle-glaſs)* factæ inde. Ponatur retorta in balneo arenæ, et adaptatur, ſecundum artem, apparatus chemicus Domini Woulfe. Vaſi primo, minus capaci, tubo conſervatore inſtructo, immitte aquæ deſtillatæ uncias duas, vaſi ſecundo, quod reliquum eſt aquæ deſtillatæ.

‘ Tandem ſupponetur ignis, ſenſim augendus, donec fundus ollæ ferreæ rubeſcat, et quamdiu prodierit ammonia. Miſceatur liquor utriuſque vaſis, et in phiolis parvis bene obturatis ſervetur.

‘ ALCOHOL AMMONIATUM: olim, SPIRITUS AMMONIÆ,

‘ ℞. Alcoholis uncias triginta duas,
Calcis recentis uncias duodecim,
Muriatis ammoniæ uncias octo,
Aquæ uncias octo.

‘ Ex hiſce paratur alcohol ammoniatum omnino ſicut aqua ammoniæ, et ſimili ſervetur modo.’

The improvement in the former conſiſts in the manipulation, but, in the latter, in the very nature of the product; for, in the former receipt, which had been inadvertently borrowed from the London College, inſtead of getting the whole of the ammonia combined with the whole of the alcohol, the greater part of the ammonia came over in the ſtate of carbonate, and was therefore inſoluble in the alcohol; while the fluid part of the product was incapable of diſſolving volatile oils, and therefore unfit for the preparations in which it was to be uſed.

XI.

Pharmacopœia Noſocomii Regii Edinburgenſis. 12mo. Edinburgi. 1804.

In every hoſpital there are certain extemporaneous formulæ in daily uſe, and which the phyſician is in the habit of preſcribing by their titles, to ſave himſelf the unneceſſary trouble of repeating in detail the directions to the apothecary, each time he wiſhes them to be exhibited. By collecting theſe formulæ, each hoſpital acquires its peculiar pharmacopœia, and it is of great importance to the pupils, wherever they are numerous, that it ſhould be publiſhed. This has accordingly been long the cuſtom in Edinburgh, and the preſent is the ſeventh edition of its Hoſpital Pharmacopœia, which is completely remodelled according to the new general Pharmacopœia, to which it forms a very uſeful appendix, by containing a collection of excellent extemporaneous formulæ written in the new nomenclature, and a copious poſological table.

XII.

Tables of the Materia Medica, or a Syſtematic Arrangement of all the Articles admitted by the Colleges of London, Edinburgh, and Dublin; exhibiting a conciſe View of the moſt material Circumſtances reſpecting them; together with a number of original and ſelected Formulæ; to which is ſubjoined a Table of all the ſecondary Salts employed in Medicine. By Jeremiah Kirby, M. D. Member of the Royal Medical Society of Edinburgh. 12mo. Edinburgh. 1805.

The little volume now before us, we are informed, was originally intended to make part of a larger work on extemporaneous preſcription. In it the articles of the materia medica are arranged into claſſes, according to their effects on the human body. Of each article are given the ſyſtematic name; the ſynonymous pharmaceutical names; the country in which it is produced, or from which it is brought; the part employed in medicine; the form in which it is commonly adminiſtered; the uſual doſes of the ſimple; the ſeveral officinal preparations which belong to the claſs; the uſual doſes of theſe; and the caſes to which the article or its preparations are more peculiarly ſuited. The doſes are for the moſt part expreſſed under two extremes, between which lies the uſual doſe for an adult, by which the doſe for any age may be adjuſted according to a table given.

To each claſs is ſubjoined a number of ſelect formulæ, both to ſerve as illuſtrations of the mode of preſcribing and adminiſtering the ſeveral articles, and to afford to the young practitioner, who is yet inexperienced in the art of preſcribing, examples of uſeful remedies.

The table of ſecondary ſalts contains much uſeful chemical information condenſed into a very ſmall ſpace. The language of the Edinburgh Pharmacopœia is very generally adopted in this work; and our author, approving of their reform, has been induced to become a reformer himſelf. Inſtead of the ſymbols uſually employed in preſcribing for ounce, &c. he has uſed the contracted word *unc.* &c.; he has alſo ſubſtituted the Arabic for the Roman numerals, and has written his directions in Engliſh. For theſe innovations the following reaſons are given.

> 'The characters ʒ and ℥ are ſo ſimilar, that they may eaſily be written for each other; and that they have been ſo written cannot be denied. The conſequence is obvious; a ſtroke of the pen too much may kill the patient, and a ſtroke too little may produce a medicine of little or no efficacy. Strange! that phyſicians ſhould have been ſo miſled by an affectation of myſtery or concealment, (for to what elſe can be attributed the uſe of theſe hieroglyphics?) as to place the ſafety of their patients at the mercy of a *lapſus pennæ!* *Unc.* and *dr.* can never be written for each other; and we ſee no good reaſon why theſe abbreviations ſhould not be employed for *uncia* and *drachma*, as well as *gr.* and *gtt.* for *granum* and *gutta*. Dr Spens, in his elegant edition of the *Pharmacopœia Noſocomii Edinburgenſis*, has employed theſe contracted words, but has retained the Roman numerals. The uſe of the Arabian figures appears calculated to enſure both perſpicuity and deſpatch. They are more eaſily written, occupy leſs room in a preſcription, and remove all poſſibility of miſtake. As to the directions, they ſhould always be written in the vernacular language. In a preſcription, perſpicuity is our firſt object; it is not here that we are called upon to diſplay our learning and claſſical elegance; and whoever conſiders that theſe are properties not always to be met with in the ſhop of an apothecary or druggiſt, will readily wave them in order to enſure the perfect underſtanding of his preſcriptions.'

This little work may alſo be conſidered as an uſeful appendage to the Edinburgh Pharmacopœia, having the ſame relation to private practice that the hoſpital Pharmacopœia has to hoſpital practice. As they are of the ſame ſize, they may be conveniently bound together, and will form an uſeful pocket volume for young practitioners.

PART III.

MEDICAL INTELLIGENCE.

Board of Health.

In our laſt Number we announced the eſtabliſhment of a Board of Health. They have already publiſhed two Reports on the ſubject of contagion, and the beſt means of counteracting its influence. Theſe Reports, with ſome other regulations connected with the performance of quarantine, have been tranſmitted to the Lord Lieutenants of the maritime counties by Lord Hawkeſbury, with orders that they ſhould be inſerted in the county newſpapers, with the view of giving to them the greateſt poſſible publicity. It therefore becomes our duty not only to promote, as far as the circulation of our Journal enables us, the views of his Majeſty's Privy Council, but alſo to record, and to render of eaſy acceſs to medical men in general, memoirs ſo intimately connected with the purpoſes for which this Journal was undertaken, and coming from ſuch high authority.

In obedience to the commands of his Majeſty's moſt Honourable Privy Council, we proceed to the conſideration of the third head of their Lordſhips' inſtructions, and to the detail of the meaſures which it would be proper to adopt, in caſe the plague, or other infectious diſeaſe, attended with great mortality, ſhould paſs the barrier of the quarantine, and actually appear amongſt us.

It is ſo long ſince the plague has viſited this country, that it is in ſome degree neceſſary to recal the mind to the miſeries inflicted upon a nation by that greateſt of all calamities to which the human race is ſubject, in order that we may hold ourſelves the more ready to comply with the regulations and orders which the exigencies of ſuch a time would call for. Unqueſtionably the miſery produced by a wide-ſpreading peſtilence far exceeds all others; and conſidering the ſize of our towns, and the population of them, particularly of the metropolis, there is hardly any nation would have ſo much to dread from that calamity as this kingdom. The deſtruction of thouſands of individuals, the interruption of trade, the check to manufactures and commerce, and the conſequent diminution of the public revenue, are ſome of the certain evils attendant upon peſtilence. The regulations, therefore, and orders neceſſary to check its progreſs, or to extinguiſh it at its firſt appearance, however ſtrict they may be, cannot be deemed harſh or ſevere, when the magnitude of the object for which they are framed is conſidered; nor indeed is there any reaſon to fear that the good ſenſe of the nation would not readily acquieſce in meaſures, the utility and advantages, as well as the neceſſity, of which, would be obvious.

It ſhould be obſerved, that the following regulations are founded chiefly on experience in what has been called the plague, by way of preeminence, or the plague of the Levant. But as no diſeaſe can be ſaid to equal, ſtill leſs to exceed this in its infectious and fatal nature, it is not unreaſonable to preſume, that the precautions which have been found ſufficient to guard againſt that, would likewiſe be effectual againſt the ſickneſs which lately prevailed at Gibraltar, or any other contagious and mortal diſtemper.

The experience of many centuries has ſhewn, that the plague is ſpread by near approach to, or actual contact with, the perſon of the ſick, and by clothes and apparel, which, having imbibed the poiſon, are capable of retaining it. Hence it is only neceſſary to keep at a certain diſtance from thoſe ill of the diſeaſe, and from ſuch things as have been expoſed to it, in order to avoid the contagion. This is the great principle we are all along to keep in view. All the regulations of quarantine reſt upon this foundation. The ſeparation of the ſick from thoſe that are well, furniſhes the only means which promiſe any reaſonable ſecurity againſt the ſpreading of ſuch calamities.

Of the ſucceſs of theſe precautions we have many ſignal inſtances. Since the fatal year of 1720 at Marſeilles, ſeveral perſons, at different periods, have been afflicted with the plague in the lazaretto of that port; yet, by a careful prevention of intercourſe, it has not ſpread. Alſo, perſons under the ſame roof, in different apartments, when all communication has been cut off, have not ſuffered. The practice, in the factories at Aleppo, and elſewhere, of 'ſhutting up,' as it is termed, affords a well-known example of the ſame kind, where the merchant continues in perfect ſecurity in the midſt of a ſurrounding peſtilence, whilſt the inhabitants of contiguous houſes, not cut off from intercourſe with the common people, become victims of the diſeaſe. In the year 1771 the plague raged at Moſcow, and in the month of September deſtroyed in that city 27,000 perſons, while the nobility and opulent gentry, who confined themſelves to their palaces or houſes, ſuffered very little: And Mertens, who was a phyſician on the ſpot, informs us, that it broke out ſeven different times in the orphan charity there, containing 1400 perſons, and was as often ſuppreſſed by means of a careful ſeparation. Likewiſe, of the peſtilential diſorder lately ſo fatal at Malaga, we are informed that the inhabitants of Medina-Sidonia remained uninfected ſo long as the governor kept the gates ſhut, but, upon intercourſe being permitted,

mitted, the diſeaſe preſently attacked them; yet then, by a vigilant and judicious police, it was confined to one quarter of the town, and did not extend its ravages further. The plague appeared in our army during the late glorious campaign in Egypt ſeveral times; but from the good care that was immediately taken to ſeparate the ſick from the ſound, and to prevent ſuch intercourſe as is allowed by the Turks, the miſchief it occaſioned was comparatively ſmall, and the diſorder was ſoon ſuppreſſed.

Theſe and other ſimilar facts point out, in a very convincing manner, the advantage to be derived from careful ſeparation, and the neceſſity of a ſtrict obſervance of the regulations to be laid down for this purpoſe.

In conſulting the experience of former times, we have found, with pleaſure, that the practice of our anceſtors, as far back as the time of Queen Elizabeth, furniſhes many wholeſome regulations, which might eaſily be adapted to the preſent times. Theſe we have thought the more deſerving of attention, not only becauſe they bear the ſtamp and ſeal of experience, but becauſe their execution does not appear to have any thing in it inconſiſtent with the laws and conſtitution of the kingdom, as the legal authority of the magiſtrate is the only power reſorted to. But though we commend the ſpirit in which the regulations were executed, ſome of the regulations themſelves ſeem highly injudicious, as particularly where they direct the ſick and the well to be ſhut up together in the infected houſes. This proceeding was, in its conſequences, no leſs injurious to the public, than cruel to individuals; for the dread of being ſhut up made every one about the ſick conceal the diſeaſe as long as poſſible; and when that could no longer be done, and the magiſtrate had ſet his mark upon the houſe, the horror of their ſituation drove them to deſpair, and made them clandeſtinely, or even by force, break through their confinement, and ſpread wide the infection.

In the following regulations, we have had reſpect to the practice both of our own country and of foreign countries in times of ſickneſs, and have endeavoured, as far as the nature of the ſubject would admit, to conſult the ſecurity of the public, and the comfort of individuals. But the principle of ſeparation being acknowledged, the mode to be adopted may admit of conſiderable variation from many local circumſtances.

Some variation of practice will likewiſe be neceſſary in different degrees of the calamity; for ſuch meaſures as ſeem beſt calculated to extinguiſh it in its beginning, would become impracticable when the miſchief had ſpread over a larger diſtrict. Let us therefore early exert ourſelves with promptitude and vigour, before it has acquired ſtrength with its growth,, and become too powerful to be reſiſted.

As ſoon as any one is reported to be infected, notice muſt immediately be given to the magiſtrate, who ſhall employ ſome phyſician to examine into the fact; and, upon receiving the confirmation of his report, the magiſtrate ſhall, without delay, remove the reſt of the inhabitants from the ſick houſe to ſome place of obſervation. It may be left to the option of the parties either to provide for themſelves, at their own expenſe, a houſe for this purpoſe, ſuch as the magiſtrate ſhall approve of, or go to one procured by the magiſtrate at the public charge. They ſhall be conſidered as ſuſpected, and ſhall be examined twice every day by ſome phyſician, in order that any one of them who ſickens may immediately be removed; the others ſhall be prohibited from all intercourſe for the ſpace of 20 days. A phyſician ought to be ſent immediately by the Lords of his Majeſty's moſt Honourable Privy Council, or by the Board of Health under their direction, for the excluſive purpoſe of attending the ſick, and alſo for examining the ſuſpected.

The ſuſpected being removed, the ſick perſon ſhall continue to reſide in the houſe where he was taken ill, and ſhall not be permitted to quit it till 20 days from the date of his perfect recovery, or longer, in caſe any open ſore, or other circumſtance, render the ſecurity doubtful. He muſt then be required two ſeveral times to go into a warm bath, or to have his body as often thoroughly waſhed all over with warm water; he muſt afterwards put on clothes which are either new, or have been effectually purified, according to ſuch proceſs as ſhall hereafter be directed.

The ſick perſon ſhall be allowed to have any one of his friends or family he chooſes, and who may be willing to attend him, as his nurſe. If there is nobody he or his friends appoint for this purpoſe, the magiſtrate ſhall provide one. In any caſe, the attendant muſt upon no account leave the houſe, till the ſick be either recovered or dead, and ſhall then perform a quarantine of 20 days, and ſubmit to the regulations preſcribed for the purpoſe of purification.

Thoſe who are removed from the ſick houſe ſhall give to the magiſtrate a correct liſt of all the articles they take with them, which ſhall be ſubjected to the ſame proceſs as is uſed at the lazarettos in regard to ſimilar articles received from ſuſpected ſhips. No articles ſhould be removed without an expreſs licenſe from the magiſtrate. It might be adviſeable to provide cheap clothing, at the public expence, for the uſe of ſuch poor perſons as have not a ſufficient change of the common articles of dreſs.

It will be neceſſary that one or more watchmen or guards be placed conſtantly at the door of the infected houſe, and alſo at the houſe of obſervation, to prevent all ingreſs or egreſs, either caſual or deſigned.

Meſſengers ſhould alſo be provided, whoſe buſineſs it ſhall be to procure ſuch things as are wanted in the ſick houſe, or houſe of obſervation. Theſe things ſhall be conveyed through a window by a plank or a baſket. In the caſe of poor people, all neceſſaries muſt be furniſhed by the magiſtrates at the expence of the county, or neighbouring counties, which, from their proximity, become more immediately intereſted in checking and extinguiſhing the diſeaſe.

If the infected perſon be in a ſituation to admit of inſulating the part of the houſe in which he reſides, it may not be neceſſary to remove the other parts of the family, provided they will ſubmit to be ſhut up in the ſame houſe, entirely ſeparated from the ſick, and cut off from all communication with the reſt of the town, to the ſatisfaction of the magiſtrate. In this, as in the former caſe, every individual of the family muſt perform a quarantine of 20 days from the time of the ceſſation of the diſorder.

The economy and management of the ſick houſe ſhould be as follows:—The perſon ill of the plague, or other contagious fever, ſhould be laid in a bed without curtains, in the largeſt and moſt airy apartment, and the bed ſhould be placed in the middle of the room; a part of the window and door ſhould be conſtantly kept open to promote a current of air in the room, taking care, however, that it do not annoy the ſick. If it be cold, there ſhould be a fire in the room, which would promote the circulation of air in the apartment. The utmoſt attention ſhould be paid to cleanlineſs, both in the perſons of the ſick, and in the clothes that are about them, which ought to be frequently changed. By theſe means the accumulation of the poiſon will be prevented in ſuch things as are about the ſick; and, by means of ventilation, the concentration of the poiſon will be guarded againſt in the air of the apartment; both which circumſtances will materially contribute to the ſafety of the nurſe and all others about the ſick.

The importance of theſe precautions will appear, if we keep in mind the well-eſtabliſhed fact, that the poiſon, by being diffuſed in the air, ſoon becomes innocent; and that, at a very ſmall diſtance from the perſons of the ſick, it ceaſes to do miſchief. It can ſcarcely, therefore, be doubted, that the leſs it is allowed to concentrate in the air of the apartment, or to collect in the apparel or bed-clothes, the leſs danger will there be of the ſpreading of the diſeaſe, and the greater chance of its ſpeedy extinction.

The phyſician, ſurgeon, apothecary, or nurſe, who attends any perſon ill of the diſeaſe, ſhould be enjoined to remain about the ſick as ſhort a time as is conſiſtent with their duty; and to avoid as much as poſſible all contact with his perſon, or with his bedding, clothes, &c. Gloves of oiled ſilk, an oiled ſilk dreſs, and other ſimilar precautions, may be uſeful with this view. Theſe might eaſily be waſhed or wiped with a wet ſponge, which ſhould be allowed to remain in water. The glaſs or cup, out of which the ſick have taken any thing, ſhould be immediately put in cold water. Any fragments of bread or other food they may have handled ſhould be treated in the ſame manner. Their excrementitious diſcharges ſhould alſo all be received in cold water, and quickly moved out of the ſick apartment.

The linen about the perſons or beds of the ſick, when changed, ſhould be put in cold water, in which they ſhould lye till it can be put on the fire and boiled; and every other part of clothing of a ſuſpicious nature might be treated in the ſame manner. The waſhing of ſuch things ſhould be all performed by waſhing machines.

Theſe precautions may appear minute; but we beg it may be recollected, that though we know moſt certainly that the poiſon proceeds from the perſon of the ſick, yet we do not know that it is confined to any one diſcharge more than another, and therefore muſt guard as much as poſſible againſt them all. The perſpiration, both ſenſible and inſenſible, the breath, the vapour hanging about the bed-clothes, the excrementitious matter diſcharged from the mouth, the noſe, the bowels, and the bladder, alſo the matter from the ſores, are all probably capable of conveying the poiſon, and ought therefore all to be carefully avoided.

If the ſick die, the body ſhould be wrapped in oiled cloth, or tarred cloth, and ſoon buried.

It muſt be remembered, that every thing that tends to ſecure thoſe about the ſick from infection, is of the greateſt importance, both by checking the progreſs of the diſeaſe, and by giving confidence to thoſe whoſe buſineſs it is to help and aſſiſt the afflicted; for by theſe means many of the miſeries which accompany peſtilence would be alleviated. Nor are ſuch precautions to be thought unavailing, when it is conſidered how many of the medical attendants in different plagues have eſcaped; which can only be imputed to their uſing ſimilar precautions with thoſe we have now ſtated. Very few of the phyſicians, or other medical attendants, who took care of the ſoldiers infected with the plague in the army of Egypt, died. And of 13 phyſicians at Moſcow, who formed a committee, by order of the late Empreſs of Ruſſia, to attend thoſe ill of the plague, one of the moſt reſpectable (Mertens) ſtates, that they uſed no other precautions than avoiding to touch the perſons or the clothes of their patients, and that he himſelf, and all his brethren, eſcaped the diſorder.

The efforts to be made to extinguiſh the diſeaſe, can be all much more completely carried into effect in the beginning, while there are but few ill, than after the contagion has extended to a greater number; therefore every thing that diligence and zeal can dictate muſt be done in the firſt inſtance. On the melancholy ſuppoſition that it ſpreads widely, new meaſures would become neceſſary.

As ſoon as any town is declared to be infected, it ought to be divided into diſtricts. Thoſe inhabiting the ſound diſtricts ſhould be at liberty to depart; but, from the tainted diſtricts, none ſhould be permitted to remove, without a certificate of health ſigned by the juſtices belonging to that diſtrict.

Three juſtices, at leaſt, in each diſtrict ſhould meet daily for the purpoſe of receiving applications for relief, of granting certificates of health, of providing for the burial of the dead, of conveying the ſick to the hoſpitals, of regulating the ſupply of proviſions, of appointing different officers and attendants, &c. &c.

A council of juſtices ſhould meet once in the week, or oftener, to conſider of the beſt manner in which their reſolutions can be carried into effect. They ſhould alſo report to the Privy Council, or to the Board of Health.

It will be the buſineſs of the juſtices to appoint examiners who may diligently inquire into the ſtate of health in each diſtrict. Theſe examiners ought to be perſons acquainted with diſeaſes, as ſurgeons or apothecaries.

Beſides examiners, it will be neceſſary to provide,

1ſt, Watchmen or guards, to be ſtationed at the doors of infected houſes;

2d, Meſſengers, who ſhall procure every thing that is wanted;

3d, Carters and carriages, to convey the ſick to the hoſpitals, and others to carry the dead to the places appointed for their burial;

4th, Conſtables or overſeers, who ſhall ſee that the above mentioned officers perform their duty.

Phyſicians, ſurgeons, and apothecaries, and alſo all other perſons, ſhould be enjoined to give immediate notice to the magiſtrates of every caſe of infection.

After the diſeaſe is ſpread, the number of ſick rendering it impracticable to provide adequately for them while they are diſperſed in different parts, or to remove all the other inhabitants from every infected houſe, it becomes expedient to carry the ſick, as early as poſſible, to ſome temporary hoſpital, unleſs their ſituation in life enable them to provide for themſelves, without riſk to the public, in a manner that ſhall be ſatisfactory to the magiſtrates.

Every attention will be neceſſary to render the hoſpitals as clean and comfortable as poſſible, that the ſick may not conſider it as a hardſhip they will endeavour to avoid, but as a benefit they will be glad to embrace

It will be neceſſary beforehand to provide ſervants for the hoſpital, and alſo a ſuperintendant, upon whom much will depend. There muſt likewiſe be carts for the excluſive purpoſe of removing perſons to the hoſpital. For hoſpitals, may be uſed houſes, barns, ſheds, tents, or any other buildings the magiſtrates can appropriate to this uſe.

The unſound part of the community ſhould be divided into ſick, ſuſpected, and convaleſcent; and they muſt be kept ſeparate: of the ſuſpected, the individuals ought as much as poſſible to be kept diſtinct from each other.

The uninfected perſons, who have been living in the ſame houſe with the ſick, ought to be conſidered as very much ſuſpected; they ſhould be confined either in that houſe, or in ſome place of obſervation, for the ſpace of twenty days, before they are declared to be ſound. During this time, they ſhould be examined night and morning by ſome phyſician, ſurgeon, or apothecary; and, on the firſt appearance of diſeaſe, that perſon ſhould be taken to the hoſpital; and the others, who have had communication with him, ſhould be obliged to begin their quarantine anew.

In order the more effectually to prevent the contagion from ſpreading among the people, all meetings or aſſemblies of every kind ſhould be diſcontinued; all places of public amuſement ſhould be ſhut up, as playhouſes, &c. and even ſchools and churches ſhould not be opened; and the places appointed for markets ſhould be removed without the town.

It becomes a duty of the magiſtrates likewiſe to appoint burial-grounds. The burials ſhould be conducted privately, and in the night-time, without tolling a bell. And the bodies ought to be depoſited at a depth of not leſs than ſix feet below the ſurface.

Moreover, ſome proviſion will be neceſſary for orphans and helpleſs children; and likewiſe for thoſe poor people who are diſtreſſed by the interruption of their uſual buſineſs. But theſe muſt only be relieved when their ſituation is properly atteſted.

For ſecuring the goods of thoſe who are moved from their own houſes to the houſe of obſervation, the magiſtrates ſhould direct ſuch meaſures to be taken as to them may ſeem moſt expedient. The apartments not uſed might be ſealed up; the goods and furniture might be ſhut up in one or more rooms, alſo to be ſealed. What remained in uſe for the ſick, if an hired nurſe were employed, ſhould be taken account of, and the inventory entered in a book to be kept by the magiſtrate.

The intercourſe with neighbours ſhould be as little as poſſible; and any perſon finding any ſymptoms of diſeaſe upon him ſhould ſeparate himſelf from others; and the moment the complaint is found to be the plague, or peſtilential diſeaſe, he ſhould give that notice to others which he would think but fair ſhould be given to him by another in his ſituation. This cutting off of intercourſe has been propoſed to go the length of putting every one into quarantine; but there are many difficulties in doing this; and we hope the diſeaſe might be cut ſhort before ſuch a meaſure becomes neceſſary. Yet it will deſerve the attention of the magiſtrates to promote the wiſhes of individuals, who, from a deſire to cut off intercourſe, may propoſe to confine themſelves to their own houſes. This may be done by appointing proper perſons to go to market for them, and furniſh all ſuch families with neceſſaries. Suppoſing the diſeaſe not to have been cut ſhort in the beginning, but to continue to ſpread, great advantages would reſult to the public from this meaſure.

Any phyſician, ſurgeon, or apothecary, who attends the ſick of the plague, or other like diſeaſe, ſhould be obliged to confine his practice entirely to that department. He ſhould be required to carry a wand, or other mark of diſtinction, and to avoid, as much as poſſible, all communication with other people. He ſhould keep one coat for the ſpecial purpoſe of viſiting the infected, and, immediately upon his return home each day, ſhould put it off to be properly fumigated. The family reſiding in the houſe with him ſhould all be conſidered as ſuſpected. And, laſtly, both he and they ſhould perform a quarantine of twenty days ſubſequent to his lateſt expoſure to infection.

We think it right to ſtate, that there is no known antidote againſt the contagion of the plague, or other diſeaſes of a ſimilar kind; for it is neceſſary that people ſhould not expoſe themſelves to danger from a reliance on the virtues of any vain remedies which may be recommended with that confidence which generally attends ignorance, and which is often ſufficient to impoſe upon the unwary. At the ſame time, we are very far from depreciating the importance of medicine at ſuch a time. For though indeed it furniſhes us with no ſpecific to ſtrike at once at the root of the diſeaſe, yet does it ſuggeſt various means of relieving the moſt diſtreſſing circumſtances which attend it, and of aſſiſting the natural powers of the conſtitution to withſtand the baneful effects of its poiſon.

It may be proper to take notice, in this place, of the employment of fumigations. Thoſe prepared from the mineral acids, in the manner hereafter to be deſcribed, may at any time be employed in the ſick chambers; but we feel it our duty to diſcountenance ſuch a reliance on their efficacy as would prevent an attention to the more important object of ventilation.

The above precautions will, in our opinion, afford the greateſt poſſible ſecurity to the public, at the ſame time that due proviſion is made for the care of the ſick. Nor can they give riſe to concealment, through fear and apprehenſion, in any rank of life. To the poor man, what can be more deſirable than to know that he will not be abandoned in the moſt cruel of all diſeaſes? Even in the ſeparation of the ſick from thoſe that are well, there is nothing that ſhould create alarm. For the pooreſt, ſeeing the reaſon for which it is done, ſhould rejoice in the proſpect it holds out of ſaving perhaps his wife, his children, or other near relations, from the moſt imminent danger of deſtruction; and we do not think it too much to expect, from the information and ſenſe of juſtice that pervades all ranks, even the pooreſt in this country, that they ſhould lend their helping hand with the ſame zeal they would do in the caſe of fire, or other impending misfortune. Even the ſick would find their advantage in giving the earlieſt notice of their diſeaſe. For what could any one ill of ſuch a malady deſire more, than that he ſhould have proper aſſiſtance himſelf, and that thoſe moſt dear to him ſhould be ſaved from the danger of periſhing by contagion derived from him? We beg leave to repeat again, that we do not think we preſume too much on the good ſenſe of the country, to ſuppoſe that the poor will ſee the reaſon and juſtice of the meaſures to be taken; and that thoſe in better circumſtances will not only readily acquieſce in them, but give their beſt aid to render them efficacious. By doing which, in every rank of life, while we are diſcharging a ſacred and important duty to our fellow creatures, we ſhall all likewiſe beſt conſult our own ſafety.

It will be highly important that the nature of any peſtilential diſorder, which may unhappily be introduced, ſhould be diſcerned at an early period. It may, therefore, be uſeful to give a ſhort account of the diſtinctive ſymptoms by which the plague and the peſtilential diſtemper at Gibraltar are principally characterized.

Perſons ill of the plague are attacked with the following ſymptoms: with cold and ſhivering; with a laſſitude and pain in the limbs; with a loſs of appetite, ſickneſs, and ſometimes vomiting; alſo with a pain in the head. Theſe affections are the companions of moſt fevers at the beginning: but, in the plague, the headach is particularly ſevere, and there is a confuſion and weight in it, and a giddineſs, which comes and goes. There is an uncommon proſtration of ſtrength, and a great oppreſſion about the præcordia, accompanied with an unuſual dejection of ſpirits. The ſick are inclined to be ſilent; and though anxiety is ſtrongly marked in the countenance, they make but few complaints. If theſe ſymptoms do not put an end to life in 24 hours, they increaſe in violence through the ſecond or third day, and the progreſs of the diſorder then ſhows itſelf in tumours of the lymphatic glands, in the armpits, groins, or neck, or by carbuncles which appear in many parts of the body. And theſe eruptions are ſuch ſpecific marks of the plague, that one or other of them is almoſt always preſent, unleſs, through the extreme malignity of the diſeaſe, or the weakneſs induced, the patient ſinks before they have time to appear. Theſe general notices we conceive to be ſufficient to make the attending phyſician or others aware of what they are to apprehend, and to decide him in taking the neceſſary meaſures of precaution which circumſtances may require.

Though the hiſtory of the peſtilential fever, which has prevailed at Gibraltar, and on the coaſts of the Mediterranean, be not perfect, yet we think it our duty to lay before your Lordſhips ſome account of it, according to the beſt information that has been received of its nature and character.

It begins with cold ſhivering; pain in the limbs; frequently, but not always, accompanied with ſickneſs, and a diſpoſition to vomit. There is a pain in the head, more or leſs violent, attended with a ſuffuſion and redneſs of the eyes. In many, the pain of the head is very diſtreſſing, and in ſome caſes confined to the forehead, whilſt in others it extended very low down between the eyes and cavities of the noſe; ſometimes the cheeks and the whole countenance were ſwollen, with a gloſſy appearance. The pulſe in this diſorder is full and quick ſoon after the acceſſion of the fever, but without any difficulty of reſpiration. The heat of the ſkin, as ſoon as the cold went off, became always very great; and this heat, with a full quick pulſe and pain in the head, generally continued to increaſe during the firſt 36 hours, and then to decreaſe gradually for the ſame length of time; ſo that, at the end of 72 hours, all febrile heat and fulneſs of the pulſe, as well as the pain of the head and limbs, ſeemed to have left the patient. In this progreſs of the diſeaſe, a bleeding from the noſe often happened, and a yellowneſs of the ſkin came on, eſpecially if the diſtreſs about the ſtomach had been great, and the effect of vomiting violent. A ſlight delirium ſometimes comes on; but, like the yellowneſs of the ſkin, it is by no means conſtant. On the third day of the attack, it frequently happens that the irritability of the ſtomach is greatly increaſed; and, in ſome caſes, nothing can afterwards be retained on the ſtomach. The evacuations from the bowels now likewiſe become too frequent, attended, eſpecially if active purgatives had been given, with a total ſuſpenſion of the office of kidneys. No urine ſeems to be ſecreted; for there is no inclination to make water, nor any ſenſe of fulneſs in the region of the bladder, nor any urine to be drawn off by the catheter. Theſe ſymptoms, viz. an increaſed irritability of the ſtomach, the adventitious diarrhœa, and the deficiency of urine, accompanied with hiccough, are conſidered as extremely unfavourable ſymptoms, and very few perſons recover after their appearance, eſpecially if there be in the ejections from the ſtomach light ragged filaments of a browniſh colour, reſembling the waſhing of the mouth, when port wine or any red wine has been uſed for that purpoſe. The great debility of the pulſe, with the exceſſive proſtration of ſtrength which now takes place, are ſymptoms which forebode a fatal termination of the diſorder.

The foregoing regulations, though far from being complete, have been drawn up, with care and conſiderable labour, from a great variety of inquiries which they involved; and we have thought it right to lay them, in their preſent ſtate, before the Lords of his Majeſty's moſt Honourable Privy Council, in order that it may be ſeen we have not been neglectful of their Lordſhips' commands in entering upon the buſineſs they had propoſed to us. We beg leave to ſtate, that we continue to employ ourſelves in the further execution of this part of our duty, and that we are at preſent engaged in conſidering the beſt means of purifying goods or houſes which may have been expoſed to infection. On this point, we hope ſoon to preſent to his Majeſty's Privy Council ſuch obſervations as appear to us moſt worthy of attention.

A. S. HAMOND. J. HUNTER.
F. MILMAN. H. R. REYNOLDS.
A. MUNRO. W. HEBERDEN.
LUCAS PEPYS. J. N. HARNESS.

Board of Health,
April 30. 1805.
JA. HERVEY, Secretary.

[*Second Report in our next.*]

Medical and Chirurgical Society of London.

WE announced the intended eſtabliſhment, and the objects of this ſociety, in our laſt Number. We have now the pleaſure to add, that, having met with the moſt cordial ſupport from many of the moſt diſtinguiſhed members of the profeſſion, the purpoſed plan has been carried into effect, and the officers and council were elected on the 28th June, conſiſting of the following gentlemen:

WILLIAM SAUNDERS, M. D. F. R. S. *Preſident.*
WILLIAM BABINGTON, M. D. F. R. S.
JOHN COOKE, M. D. F. A. S.
JOHN ABERNETHY, F. R. S.
Sir WILLIAM BLIZARD, F. R. S.
} *Vice-Preſidents.*
ASTLEY COOPER, F. R. S. *Treaſurer.*

Ch. Rochemont Aiken, Eſq. *Sec.*
Matthew Baillie, M.D. F.R S.
Thomas Bateman, M.D. F.L.S.
Gilbert Blane, M.D. F.R.S.
James Currie, M.D. F.A.S.
Sir Walter Farquhar, Bart. M.D.
Thompſon Forſter, Eſq.
Algernon Frampton, M.D.
John Heaviſide, Eſq. F.R.S.
Alex. Marcet, M.D. *For. Sec.*
David Pitcairne, M.D. F.R.S.
H. Revell Reynolds, M.D. F.R.S.
H. Leigh Thomas, Eſq.
James Wilſon, Eſq. F.R.S.
John Yelloly, M.D. *Secretary.*

The meetings of the ſociety are intended to commence in October. In the mean time, any donations of books or communications, with which the ſociety may be favoured, will be received at their apartments in Verulam Buildings, Gray's Inn.

Reſolution of the Royal Jennerian Society.

At a ſpecial meeting of the Medical Council, July 15. 1805, Dr JENNER in the chair, the council having been informed that various caſes have occurred which have excited prejudices againſt, and occaſioned obſtacles to, vaccine inoculation,

Reſolved,

That a committee be appointed to inquire into the nature and evidence of ſuch caſes, and likewiſe of ſmall-pox, ſubſequent both to the natural and inoculated ſmall-pox, and that they make report of the ſame to the council. Alſo that they may be requeſted to prepare ſuch a memorial as they may deem beſt calculated to remove the objections to, and extend the practice of vaccination.

The ſecretary is requeſted to ſummon the committee to meet on Monday the 22d of July, at the Central Houſe, at eight o'clock preciſely. EDWARD JENNER, *Chairman.*

Committee.—Dr Croft, Mr Parkinſon, Mr Paytherus, Mr Hingeſton, Mr Lewis, Mr Edward Leeſe, Mr Upton, Dr Yelloly, Mr Addington; Mr Wachſell, Dr Baillie, Dr Willan, Dr Denman, Mr Wilſon, Dr Hamilton, Mr Ring, Mr Aikin, Dr Skey, Mr Knight, Mr Field, Dr Adams, Dr Marcet, Mr Pearſon, Dr Blane, Dr Clark.

Central Houſe, Saliſbury Square,
Monday, July 15. 1805

WE are ſorry that we are obliged to delay, for want of room, an excellent memorial addreſſed by a medical committee to the inhabitants of Norwich and of the county of Norfolk, in ſupport of a plan for the extinction of the ſmall-pox, by a general inoculation for the cow-pock.

[Extract of a Letter from a Correſpondent in London.]

Conjectures concerning the Occaſion of the ſudden Deaths in Dropſies.

Every practitioner in much experience muſt have been frequently ſurpriſed by the ſudden death of his patient in dropſies, eſpecially in caſes of hydrothorax. Although there was no probability of a cure, yet that the ſufferer ſhould expire in a few minutes time, and when the preceding appearances were only thoſe in which life commonly continues many weeks or months, is an unlooked-for event. It has been conjectured that the preſſure of water in the pericardium, or in the cavities between the lungs and pleura, ſuddenly ſtopped the action of the heart, or the performance of reſpiration; but this explanation is obviouſly unſatisfactory.

In ſeveral inſtances of theſe unexpected deaths, I have lately found oſſifications in the valves of the heart, as well as of the coronary arteries, which I formerly did not look for, as we know that ſudden death occurs in other diſeaſes where ſuch oſſifications exiſt. I am diſpoſed to to think, that this morbid ſtate may afford a more reaſonable conjecture of theſe terminations in dropſies.

On the Diſcovery of the diſinfectious Power of Mineral Acids.

It is remarkable, that, in the many treatiſes lately publiſhed on the diſcovery of the uſe of acid gaſes for deſtroying contagion, the name of the late Dr George Fordyce is not once mentioned; yet, if reference be had to his pupils, it will be found that he propoſed the muriatic acid gas for deſtroying infection earlier than Morveau. In the third edition of Fordyce's Elements, 1761, p. 170, for preventing the jail fever, &c. it is propoſed to deſtroy the putrid matter in the air *by the acids converted into vapour*, as in the plague. And in the plague, it is ſaid, p. 154, "The putrid vapour in the air may be deſtroyed by impregnating it with acids; as by burning great quantities of wood, or detaching great quantities of *concentrated muriatic acid* from ſea-ſalt by the vitriolic, and evaporating it." If the nitrous acid gas poſſeſs the advantages lately publiſhed over the other acid gaſes (which I do not believe), it will be moſt efficacious to diſengage *nitrous gas* in the infected rooms and other places, becauſe it will be moſt likely, by being more readily diffuſed, to produce a more extenſive diffuſion of *nitrous acid gas*.

On the Mixture of Vaccine and Variolous Matter.

I am inclined to think, that the experiments of the commixture of the two infectious matters inſtituted by the late Dr Woodville and Dr Pearſon are not accurate, or at leaſt that their reſults will not be found commonly true. I have repeatedly, in the courſe of the laſt two years, inſerted a mixture of equal parts of vaccine and variolous matter into from three to ſix punctures in each patient's arms, and in no one inſtance has the ſmall-pox been produced; but, except now and then a failure of effect altogether, uniformly the vaccine pock has been excited, the matter of which pock excited the genuine cow-pock in others. Yet I have found that the ſmall-pox frequently occurred, not only when the vaccine inoculation was inſtituted on the ſame day with the variolous on diſtinct parts, but alſo when the variolous was performed two days later than the vaccine; although the progreſs ſeemed to be equal of the two kinds of pock in the parts inoculated. Are we not hence warranted to conclude, that the vaccine matter counteracts the agency of the variolous in the ſame part to which the two matters are applied, although, *a priori*, it ſeems juſt as reaſonable that the variolous ſhould counteract the vaccine in theſe circumſtances? When the morbific matters are inſerted diſtinctly in different parts on the ſame day, or even the one on the day after the other, if both take effect locally, almoſt always the ſmall-pox eruption is produced, although the vaccine pock proceeds as regularly through its ſtages as if unattended by the ſmall-pox, and the matter of it produces always the diſtinct cow-pock on inoculation. The ſmall-pox alſo frequently occurs, although the variolous matter be inſerted three days after the vaccine inoculation; but never, as I have ſeen, at a later period, provided the vaccine matter take effect as uſual, ſo as to produce a ſmall veſicle by the fifth day. I am hence diſpoſed to infer, that the conſtitutional unſuſceptibility of the ſmall-pox is not effected immediately by a ſudden impulſe upon the ſyſtem, but is a change gradually wrought during ſeveral days.

1ſt, Becauſe it frequently happens that the ſmall-pox eruption occurs on the 12th and even 13th day of vaccine affection, when the cow-pock is advanced in the ſcabbing ſtage, and when it is taken for granted that the conſtitutional change, by which unſuſceptibility of the ſmall-pox is produced by the vaccine inoculation, has taken place as early as the 8th, 9th, or 10th, or at leaſt by the 11th day. The ſmall-pox occurs at this period of the cow-pock, when the variolous inoculation has been inſtituted even three days after the vaccine.

2dly, Becauſe the natural ſmall-pox has frequently broken out on the 13th day, and in the ſtage of the vaccine pock juſt mentioned.

Small-pox again inoculated in London.

THE many late failures of ſuppoſed cow-pock to prevent the ſmall-pox, has excited in ſome parts ſo much clamour among the lower orders of people, that they inſiſt upon being inoculated for the ſmall-pox at ſome of the public inſtitutions. It is to be expected that many more ſimilar failures will from time to time occur, from the numbers inoculated, in the ſame manner as thoſe who have already taken the ſmall-pox. As, however, the proportion is ſtill very ſmall of the caſes of ſmall-pox after cow-pock, even from under the hands of unſkilful inoculators, and as ſcarcely a ſingle one occurs among thoſe inoculated by experienced and careful practitioners, there is little reaſon to doubt, that in time the ſmall-pox will be extinguiſhed in the Britiſh realms.

Extract of a Letter from Dr James Caſſels, Surgeon in Lancaſter.

The following is ſome account of the *Black Drop*, a concentrated preparation of opium, known above 50 years ago to many people in this end of the country, and a favourite medicine with ſome practitioners.

According to my information, there are two preparations now in uſe; in one rectified ſpirit of wine is the menſtruum, in the other the opium is diſſolved in a vegetable acid. The receipt for the former is this:

Take of purified opium five ounces;
——— pimento and cinnamon, of each two drams;
——— ſaffron and Seville orange peel, of each one dram;
——— rectified ſpirit of wine, a pint:

Digeſt with a gentle heat a week, and ſtrain the liquor through flannel with a ſcrew-preſs; then add two or three ounces of powdered ſugar-candy.

The other receipt is, more properly ſpeaking, an infuſion, than a tincture of opium, and is thus prepared:

Take of opium four ounces;
——— juice of quinces or verjuice, four pints;
Digeſt three weeks, then add
Saffron, one ounce;
Cloves, nutmegs, and cinnamon, of each an ounce in coarſe powder:

Continue the digeſtion a week, ſtrain through flannel, and evaporate the ſtrained liquor to the conſiſtence of ſyrup. Lemon juice, or Mr Coxwell's concentrated acid of lemons, I apprehend, will anſwer the purpoſe equally well as either of the vegetable juices above mentioned.

One drop of theſe preparations is reckoned equal to three or four of the common tincture of opium. The intelligent reader will ſoon diſcover that neither the one nor the other medicine is new; for Dr Jones, in his 'Myſteries of Opium revealed,' publiſhed above an hundred years ago, makes mention of a preparation of opium ſimilar to the ſecond receipt, under the title of laudanum liquidum cydoniacum; and Quincey, in his Diſpenſary, publiſhed in the year 1722, not only takes notice of the ſame medicine, but adds receipts for other tinctures of opium with aromatics, which, I have no doubt, will be found equally efficacious as either of the above preparations, or what is ſold under the name of Black Drop.

As I find the common preparations of opium anſwer all the intentions that can be expected from the known qualities of this beſt of medicines, I never employ any other. Where I know they are apt to cauſe ſickneſs and headach, the addition of an aromatic and a neutral ſalt, as the water of acetite of ammonia, has been attended with a very pleaſing effect.

Extract of a Letter from Fabbroni of Florence, dated 2d April 1805, *on the Fever which was epidemic at Leghorn in* 1804.

A GASTRIC bilious fever, one of thoſe which Pinel would call *ataxiques adynamiques*, has ruined the commerce of Leghorn, and of all Tuſcany, becauſe ſome evil diſpoſed perſons propagated a report that it was the yellow fever of America. I have been ſent there twice by the government to eſtabliſh precautions to preſerve the public health, but ſolely in a political view. I have not remarked that the fever was at all contagious, neither through the medium of perſons nor of goods; nevertheleſs, we have been ſeparated from the reſt of the world by cordons of troops; we have been prevented from paſſing them, and our merchandiſe has not been received, although three months have elapſed ſince a ſingle individual was ſick. In that populous city, containing 60,000 ſouls, this fever, confounded with a totally different ſpecies of malignant fever, carried off only 700 individuals in the ſpace of four months! The day that, for the ſatisfaction of our neighbours, we opened an hoſpital for thoſe ill of this fever, we only found 14 patients to be ſent to it. I aſſure you poor Tuſcany, innocent as it is, has lately been dreadfully afflicted both by men. and by nature, which has ſorely viſited us with earthquakes, inundations, and unfavourable harveſt weather.

Dr RICHARD PEARSON of London wiſhes it to be known, that the articles belonging to the department of medicine, which he has contributed to the new Cyclopædia, now publiſhing under the ſuperintendance of Dr Rees, are compriſed within the latter part of the letter A, and the letter B, beginning with ASTHMA, and ending with BULIMIA. They relate wholly to the deſcription and treatment of internal diſeaſes, with the exception of the articles BATHING (*medicinally conſidered*); BLEEDING; BLOOD (*morbid appearances of*); and BILE (*diſeaſed conditions of*).

Dr R. P. would gladly have gone on cooperating with thoſe gentlemen (eminently diſtinguiſhed for their knowledge in the various branches of ſcience), whoſe names have been announced in the Cyclopædia proſpectus, towards the completion of a work which promiſes to rival, if not to ſurpaſs, the moſt celebrated works of the kind which have been publiſhed in other countries; but he found that he could not ſpare ſufficient time from his other employments for that purpoſe.

Dr. R. P. has thought it right to make this declaration, that if there be any thing faulty or unſatisfactory in the articles relating to the practice of phyſic from ASTHMA to BULIMIA incluſively, no cenſure may attach either to his predeceſſors or his ſucceſſors in that department.

Dr R. P. can corroborate, from his experience, what Dr James Wood has ſtated in No. II. of the Edinburgh Medical and Surgical Journal, reſpecting the medicinal powers of the muriate of lime in ſcrofulous caſes, which he (Dr R. P.) introduced about ſix or ſeven years ago into the General Hoſpital at Birmingham, before he removed from thence to the metropolis. He muſt obſerve, however, that the prepartion which he then employed, and has ſince preſcribed, is not the ſame with Dr Wood's; but is made by firſt ſaturating the lime with muriatic acid, then diluting the compound with water, and afterwards evaporating to dryneſs. The reſiduum, while yet hot, is ſcraped out into a wide-mouthed bottle, provided with a ground ſtopple. Of this deliqueſcent ſalt, the doſe is from three to five grains to children, and from 15 to 20 grains to adults, once or twice a day, diſſolved in gruel or ſugar and water. A letter which he wrote on this ſubject, ſigned with the initials R. P. was inſerted in the 3d volume of the London Medical Review and Magazine, publiſhed in 1800.

On the 12th of September, the SENATUS ACADEMICUS of the Univerſity of Edinburgh, conferred the degree of Doctor in Medicine, on the following Gentlemen, after having gone through the appointed examinations, and publicly defended their reſpective inaugural diſſertations.

FROM ANTIGUA.

David Aird,	*De Sanitate in India Occidentali tuenda.*

FROM ENGLAND.

Matthew Gleave,	*De Lue Venerea.*
William Greaves,	*De Scarlatina.*
Alexander R. Sutherland,	*De Contagione.*

FROM IRELAND.

Henry Blennerhaſſet,	*De Hydrothorace.*
James Gloſter, A. B. T. C. D.	*De Aſphyxia.*
Edmond Glover.	*De Dyſenteria.*
Henry Harris,	*De Hydrocele.*
Patrick Kean,	*De Phthiſi Pulmonali.*
Charles Murphy,	*De Cynanche Maligna.*
Archibald Nicolls,	*De Cynanche Tonſillari.*
William Wigmore,	*De Pneumonia.*
William Galbraith Wray,	*De Scarlatina Anginoſa.*

FROM SCOTLAND.

Arthur Edmonſton,	*De Cholera.*
Alexander Halliday,	*De Aſthmate.*
Gilbert Macracken,	*De Pingui et Pinguitudine.*
Alexander Macdonald,	*De Rheumatiſmo.*
David Maclagan,	*De Sanitate tuenda.*
John Macleod,	*De Syphilitide Infantium.*
John Mitchell,	*De Scarlatina.*
John Charles Ogilvie,	*De Hematemate.*
James Sanders,	*De Hernia Crurali.*

FROM WALES.	
William Bulkeley Parry,	*De Patriæ Deſiderio.*
FROM VIRGINIA.	
John Raines Lucas,	*De Hydrocephalo Acuto.*

Univerſity of Edinburgh.

The claſſes for the different branches of Medicine will be opened for the enſuing ſeſſion as follows:

CLASSES.	DAY AND HOURS.		PROFESSORS.
Anatomy and Surgery, -	Wedneſday, *Oct.* 30.	1	Drs Monro
Chemiſtry and Chemical Pharmacy, - - - - - -		10	Dr Hope
Dietetics, Materia Medica, and Pharmacy, - -		8	Dr Jas. Home
Theory of Phyſic, - - -		11	Dr Duncan
Practice of Phyſic, - - -		9	Dr Gregory
Theory and Practice of Midwifery, - -		3	Dr Jas. Hamilton
Natural Hiſtory, - - -	- - -	-	Mr Jamieſon

Two courſes of Practical Anatomy will be given, under the ſuperintendance of Dr Monro jun. and Mr Fyfe; the one to begin on the 1ſt November, and the other on the 1ſt of February.

Clinical Lectures on the caſes of patients in the Royal Infirmary, by Dr Duncan and Dr Home, upon Tueſday and Friday,—the firſt lecture by Dr Duncan on Tueſday, Nov. 5. at 5 p. m.

Clinical Surgery by Mr Ruſſell, the firſt lecture on Monday, Nov. 4. at 5 p. m.

Dr Rutherford will begin a courſe of Botany in May 1806.

Univerſity of Glaſgow.

The Medical Lectures in the Univerſity of Glaſgow will begin on Tueſday the 5th November, at the following hours:

Dietetics, Materia Medica, and Pharmacy, by Dr Millar, at 10 o'clock forenoon;
Midwifery, by Mr Towers, at 11;
Theory and Practice of Phyſic, by Dr Freer, at 12;
Anatomy and Surgery, by Dr Jeffray, at two o'clock afternoon;
Chemiſtry and Chemical Pharmacy, by Dr Cleghorn, at ſeven;
Clinical Lectures on the caſes of patients in the Royal Infirmary, by Dr Cleghorn and Dr Freer. The firſt lecture by Dr Cleghorn, on Tueſday evening the 12th November, at ſix o'clock.
Dr Brown will begin his Lectures on Botany about the beginning of May next.

Regulations enacted by the Senate of the Univerſity of Glaſgow reſpecting degrees in Medicine.

I.—That before any perſon can be allowed to be a candidate for a degree in medicine in this univerſity, he ſhall appear perſonally before the ſenate, and lay before them evidence that, during the ſpace of three years, or ſeſſions of ſix months each, he has regularly attended in ſome univerſity or univerſities, or in ſome medical ſchool or ſchools of reputation, the following medical claſſes; viz. Anatomy and Surgery, Chemiſtry and Pharmacy, the Theory and the Practice of Phyſic, Materia Medica and Botany.

II.—That he ſhall bring forward evidence that, during one year at leaſt, he has attended medical claſſes in this univerſity.

III.—That the candidate ſhall undergo three ſeparate examinations in private, by the medical profeſſors of the univerſity, and write a commentary on an aphoriſm of Hippocrates, and another on a caſe of diſeaſe propounded to him by the ſaid examiners. The firſt examination ſhall be on anatomy and phyſiology; the ſecond on the theory and practice of phyſic; and the third on chemiſtry, materia medica, pharmacy, and botany.

IV.—That the examiners ſhall report to the ſenate their opinion reſpecting the medical knowledge of the candidate; and if their report be favourable, his name, as a candidate for a degree, ſhall be entered in the minutes of ſenate, and a day fixed, when the candidate ſhall read his commentaries on the aphoriſm and caſe, and anſwer ſuch queſtions, on the ſeveral branches of medical ſcience, as ſhall be put to him by the examiners in preſence of the ſenate. If the ſenate be of opinion that the candidate has ſhown himſelf worthy of a degree, it ſhall be conferred, in preſence of the ſenate, by the Vice-Chancellor, provided the candidate has not publiſhed a theſis, which he may, or may not do, according to his own option; but if he has publiſhed a theſis, he muſt defend it, and the degree muſt be conferred in the comitia.

V.—The whole of the examinations ſhall be carried on, and the commentaries on the aphoriſm and caſe muſt be written, in the Latin language.

St George's Hoſpital.

LECTURES ON PHYSIC AND CHEMISTRY.

THE firſt Monday in October next will commence a courſe of lectures on phyſic and chemiſtry, at the laboratory in Whitcomb Street, Leiceſter Square, at the uſual morning hours; viz. on therapeutics at a quarter before eight; on the practice of phyſic at half after eight; and on chemiſtry at a quarter after nine o'clock.

Theſe lectures are delivered every morning, except on Saturdays, when, at nine o'clock, a clinical lecture is given on the caſes of Dr Pearſon's patients in St George's Hoſpital.

By George Pearſon, M. D. F. R. S. of the College of Phyſicians, and Senior Phyſician to St George's Hoſpital, &c. &c.

N. B. Propoſals may be had at St George's Hoſpital, and at No. 52. Leiceſter Square.

Original Vaccine Pock Inſtitution, No. 44. Broad Street, Golden Square, 6th September 1805.

Mr Benjamin Jesty, farmer of Downſhay in the Iſle of Purbeck, having (agreeably to an invitation from the Medical Eſtabliſhment of the Original Vaccine Pock Inſtitution, Broad Street, Golden Square), viſited London in Auguſt 1805, to communicate certain facts relating to the Cow Pock Inſtitution, we think it a matter of juſtice to himſelf, and beneficial to the public, to atteſt that, among other facts, he has afforded deciſive evidence of his having vaccinated his wife and two ſons, Robert and Benjamin, in the year 1774; who were thereby rendered unſuſceptible of the ſmall-pox, as appears from the expoſure of all the three parties to that diſorder frequently during the courſe of 31 years, and from the inoculation of the two ſons for the ſmall-pox 15 years ago. That he was led to undertake this novel practice in 1774, to counteract the ſmall-pox, at that time prevalent at Yetminſter, where he then reſided, from knowing the common opinion of the country, ever ſince he was a boy, (now 60 years ago), that perſons who had gone through the cow-pock naturally, *i. e.* by taking it from cows, were unſuſceptible of the ſmall-pox; by himſelf being incapable of taking the ſmall-pox, having gone through the cow-pock many years before; from having known many individuals, who, after the cow-pock, could not have the ſmall-pox excited; from believing that the cow-pock was an affection free from danger; and from his opinion that, by the cow-pock inoculation, he ſhould avoid ingrafting various diſeaſes of the human conſtitution, ſuch as the "evil, madneſs, lues, and many bad humours," as he called them.

The remarkably vigorous health of Mr Jeſty, his wife, and two ſons, now 31 years ſubſequent to the cow-pock, and his own healthy appearance at this time, 70 years of age, afford a ſingularly ſtrong proof of the harmleſſneſs of that affection; but the public muſt, with particular intereſt, hear that, during the late viſit to town, Mr Robert Jeſty very willingly ſubmitted publicly to inoculation for the ſmall-pox in the moſt rigorous manner; and that Mr Jeſty alſo was ſubjected to the trial of inoculation for the cow-pock after the moſt efficacious mode, without either of them being infected. The circumſtances in which Mr Jeſty purpoſely inſtituted the vaccine pock inoculation in his own family, viz. without any precedent, but merely from reaſoning upon the nature of the affection among cows, and from knowing its effects in the caſual way among men, his exemption from the prevailing popular prejudices, and his diſregard of the clamorous reproaches of his neighbours, in our opinion, will entitle him to the reſpect of the public for his ſuperior ſtrength of mind: But, further, his conduct in again furniſhing ſuch deciſive proofs of the permanent antivariolous efficacy of the cow-pock, in the preſent diſcontented ſtate of mind in many families, by ſubmitting to inoculation, juſtly claims at leaſt the gratitude of the country. As a teſtimony of our perſonal regard, and to commemorate ſo extraordinary a fact, as that of preventing the ſmall-pox by inoculating for the cow-pock 31 years ago, at our requeſt, a three-quarter length picture of Mr Jeſty is painted by that excellent artiſt Mr Sharp, to be preſerved at the Original Vaccine Pock Inſtitution.

GEO. PEARSON,
LAW. NIHELL,
THOS. NELSON, } *Phyſicians.*

T. KEATE,
T. FORSTER, } *Conſulting Surg.*

JOSEPH CONSTANTINE CARPUE,
J. DORATT, } *Surgeons.*

FRAS. RIVERS,
EV. A. BRANDE,
PH. DE BRUYN, } *Viſiting Apoth.*

JOHN HEAVISIDE,
THOMAS PAYNE, } *Treaſurers.*

WILLIAM SANCHO, *Secretary.*

Account of Diſeaſes treated at the Public Diſpenſary, Carey-Street, from 31ſt May to 31ſt Auguſt 1805.

ACUTE DISEASES.

	No. of Caſes.		*No. of Caſes.*
Typhus - - - - - - -	3	Ophthalmia - - - - - -	2
Quotidiana - - - - - -	4	Catarrhus - - - - - - -	41
Tertiana - - - - - - -	2	Pneumonia - - - - - -	11
Scarlatina Anginoſa - - -	2	Pertuſſis - - - - - - -	5
Rubeola - - - - - - -	2	Enteritis - - - - - - -	2
Variola - - - - - - -	7	Cholera - - - - - - -	5
Eryſipelas - - - - - - -	3	Hyſteritis - - - - - - -	1
Cynanche Tonſillaris - -	3	Febris Infantium - - -	4
——— Parotidæa - -	2	Rheumatiſmus - - - - -	11

CHRONIC DISEASES.

	No. of Caſes		*No. of Caſes.*
Cephalæa - - - - - - -	21	Enterodynia - - - - - -	9
Hemicrania - - - - - -	2	Tabes Meſenterica - - -	2
Vertigo - - - - - - -	1	Verminatio - - - - - -	20
Otalgia - - - - - - -	1	Tænia - - - - - - - -	1
Catarrhus Chronicus et Dyſpnœa - - - - - - -	27	Hæmorrhois - - - - - -	8
		Hæmaturia - - - - - -	2
Hæmoptyſis & Phthiſis - -	29	Dyſuria - - - - - - -	8
Aſthma - - - - - - -	2	Nephralgia - - - - - -	1
Aneuryſma arter. carot. -	1	Menorrhagia - - - - - -	12
Pleurodyne - - - - - -	1	Amenorrhœa - - - - - -	6
Dyſpepſia - - - - - - -	47	Chloroſis - - - - - - -	4
Aſthenia - - - - - - -	27	Leucorrhœa - - - - - -	7
Icterus - - - - - - -	2	Prolapſus Uteri - - - - -	1
Hepatitis Chronica - - -	2	Hyſteria - - - - - - -	5
Colica - - - - - - - -	2	Epilepſia - - - - - - -	1
Colica Pictonum - - -	7	Melancholia - - - - - -	1
Diarrhœa - - - - - - -	6	Hemiplegia - - - - - -	3
Dyſenteria - - - - - -	6	Paralyſis Saturnina - - -	2

	No. of Caſes.		*No. of Caſes.*
Paralyſis rheumatica	1	Rachitis	1
Rheumatiſmus chronicus	47	Aphthæ	2
Lumbago et Sciatica	7	Porrigo (Scald-head)	3
Syphilis	2	Urticaria	3
Gonorrhœa	3	Impetigo (Running tetter)	6
Schirrus Uteri	1	Scabies (Itch)	7
Aſcites	8	Prurigo	3
Hydrothorax	2	Lichen	6
Anaſarca	9	Purpura	1
Tympanites	2	Pſoriaſis (Scaly tetter)	2
Scrofula	4		

On peruſing the preceding catalogue, the reader would be almoſt led to ſuppoſe that it contained a regiſter of the diſeaſes of the ſpring or winter; ſince rheumatiſms and catarrhal diſorders are among the moſt numerous in the liſt, and the uſual complaints of the alimentary canal, peculiar to the ſummer months, are few. During the months of June and July, the temperature was generally cold, the viciſſitudes frequent, and there was much rain. The catarrhal complaints chiefly occurred during thoſe months; and the few caſes of cholera which have appeared, happened during the laſt fortnight. Sydenham conſidered the cholera as a diſeaſe of Auguſt almoſt excluſively, and ſeems to attribute it chiefly to the uſe of fruit. Seaſons ſuch as the laſt and the preſent ſummer, however, afford a ſufficient refutation of theſe obſervations of that great phyſician, and prove that cholera and bilious diarrhœa occur moſt frequently in whatever month the heat is greateſt. They were conſiderably more frequent during the hot month of September 1804, than in the preceding Auguſt, although the ſummer fruits are conſiderably more plentiful in the latter. We have no evidence, indeed, that the uſe of fruits has any tendency to increaſe the biliary ſecretion, upon which the diſeaſes in queſtion immediately depend; but in hot climates the bile is generally exuberant, and thoſe diſeaſes abound. They are moſt frequent too, we believe, in thoſe who indulge in animal food, or in vinous and ſpirituous liquors; ſo that fruit and vegetables would rather ſeem to be a preventive than a cauſe of exuberance of bile. Dr Cullen, therefore, was without doubt correct in attributing the diſeaſe ſolely to external heat.

A few caſes of typhus, ſcarlet fever, and meaſles have occurred during the preſent month; but there appears to be no virulence of contagion connected with them, and they do not readily ſpread. The only diſeaſe which can be conſidered as epidemic at preſent is the ſmall-pox. It is lamentable that the prejudiced and illiberal attacks that have lately been made againſt the cow-pock, founded upon the moſt unſubſtantial evidence, and ſpecious only to thoſe who are ignorant of the difficulty and the caution required to eſtabliſh a medical truth, ſhould have materially retarded the progreſs of that ſalutary preventive. Some of the caſes of ſmall-pox in the liſt were of a malignant ſpecies, and proved fatal; and a conſiderable number has fallen under our obſervation, beſides thoſe who applied to the diſpenſary for aſſiſtance.

PART IV.

LIST OF NEW BOOKS.

DOMESTIC.

Answers to all the objections hitherto made againſt the Cow-pock. By Joſeph Adams, M. D. 1s. The profits ariſing from the ſale to be given to the ſmall-pox and inoculation hoſpitals.

Anatomia Britannica. 3 vol. 12mo. 1804.

A ſhort Account of the diſeaſe in Corn, called by farmers the Blight, the Mildew, and the Ruſt. By Sir Joſeph Banks, Bart. K. B. F.R.S. 8vo. Illuſtrated by an engraving. 1805.

The Anatomy of the Human body, vol. 4. containing the anatomy of the viſcera of the abdomen, the parts in the male and female pelvis, and the lymphatic ſyſtem, with an appendix. By Charles Bell, Fellow of the Royal College of Surgeons, Edinburgh. 8vo. London. 1804.

A Meteorological Journal of the year 1804, kept in Paternoſter Row. By William Bent. 8vo. 1s. 6d.

The Works complete of John Brown, M. D. of Edinburgh, conſiſting of, 1. Obſervations on former ſyſtems of medicine, and outlines of a new doctrine. 2. A refutation of the doctrines of Spaſm, 3. Elements of medicine, a corrected tranſlation. To which is prefixed, a biographical account of the author, by his ſon William Cullen Brown, M. D. 3 vol. 8vo. London. 1804.

The Medical and Phyſical Journal, conducted by T. Bradley, M. D. R. Batty, M. D. and A. A. Noehden, M. D. vol. 12. and 13. 8vo. London. 1804 and 1805.

Practical Obſervations concerning Sea-Bathing; with remarks on the uſe of the warm bath. By A. P. Buchan, M. D. 8vo. London. 1804.

The popular Compendium of Anatomy, containing alſo an article on ſuſpended animation. By William Burke, ſurgeon. 12mo. London. 1804.

A Practical Treatiſe on the Efficacy of Stizilobium, or Cowhage, (the dolichos pruriens of Linnæus), internally adminiſtered in diſeaſes occaſioned by worms; the ninth edition, conſiderably enlarged. By William Chamberlaine. 12mo. London. 1805.

A Treatiſe on the Prevention of Diſeaſes incident to Horſes, from bad management in regard to ſtables, food, water, air, and exerciſe. To which are ſubjoined, obſervations on ſome of the ſurgical and medical branches of farriery. By James Clark, farrier to his Majeſty for Scotland. Fourth edition. 8vo. London. 1805.

Clutterbuck de Sede et Natura Febris. 8vo. London, 1804.

Practical Obſervations on Inſanity, and ſuggeſtions towards a mode of treating diſeaſes of the mind. To which are ſubjoined, remarks on medical juriſprudence. By Joſeph Maſon Cox, M. D. 8vo. 5s. London, 1804.

An Eſſay on the Entropeon, or Inverſion of Eyelids. By P. Crampton, M. D.

The London Diſſector. 12mo. London, 1804.

An Introduction to Midwifery. By T. Denman, M. D. Fourth edition, corrected. 2 vol. 8vo. London, 1805.

Obſervations on Water, with a recommendation of a more convenient and extenſive ſupply of Thames water to the metropolis and its vicinity, as the beſt means to counteract peſtilential or pernicious vapours. By R. Dodd. 2s. 6d. boards.

Annals of Medicine for the year 1803, exhibiting a conciſe view of the lateſt and moſt important diſcoveries in medicine and medical philoſophy. By Andrew Duncan, ſen. and jun. M. D. &c. 8vo. Edinburgh, 1804.

The Edinburgh New Diſpenſatory. The ſecond edition, enlarged and much improved. By Andrew Duncan, jun. M. D. &c. 8vo. with plates. Edinburgh, 1804.

A Treatiſe on the Hydrocele. By Sir James Earle, F. R. S. Third edition, with improvements. 8vo. London, 1805.

An Account of two Caſes of Gout which terminated in death, in conſequence of the external uſe of ice and cold water. By A. Edlin. 8vo. London, 1804.

An Appendix to Practical Obſervations on the nature and treatment of exaſperated ſymptoms of the Venereal Diſeaſe; containing thoughts on the nature and management of the venereal bubo, particularly in its obſtinate ſtate. By Edward Geoghegan, ſurgeon to the Dublin General Diſpenſary. 8vo. London, 1804.

Important Diſcoveries and Experiments on Ice, Heat, and Cold. By the Rev. James Hall, 2s. 6d.

The Death-warrant of the French Theory of Chemiſtry. By Robert Harrington, M. D. 8vo. 7s. London, 1804.

Obſervations on the ſimple Dyſentery and its Combinations; containing a review of the moſt celebrated authors who have written on the ſubject, and alſo an inveſtigation into the ſource of contagion in that and ſome other diſeaſes. By William Harty, M. D. 8vo. London, 1805.

A Clinical Hiſtory of Diſeaſes, Part I., being, 1. A clinical hiſtory of the acute rheumatiſm; 2. A clinical hiſtory of the nodoſity of the joints. By John Haygarth, M. D. F. R. S. Edin. 8vo. London, 1805.

Proceedings of the Board of Health in Mancheſter. 12mo. 4s. bds.

Experiments proving Vacciolation, or Cow-pock Inoculation, to be a permanent ſecurity againſt ſmall-pox; with facts and remarks. By Samuel Hill, ſurgeon, Portſea. London, 1804.

Salutary Caution reſpecting Gout; in which the doctrines maintained in a recent publication by Dr Kinglake are refuted. By John Hunt, author of Hiſtorical Surgery. 2s. 6d.

Culina Famulatrix Medicinæ; or Receipts in Cookery, with a medical commentary. By A. Hunter, M. D. York. 4s.

A Syſtem of Mineralogy. By Robert Jamieſon, Regius Profeſſor of Natural Hiſtory in the Univerſity of Edinburgh, &c. vol. 2. 8vo. London, 1805.

A Mineralogical Deſcription of the County of Dumfries. By R. Jamieſon, 6s.

A Treatiſe on the Proceſs employed by Nature in ſuppreſſing the Hæmorrhage from divided and punctured Arteries, and on the uſe of the Ligature; concluding with obſervations on ſecondary hæmorrhage. The whole deduced from an extenſive ſeries of experiments. By J. F. D. Jones, M. D. Member of the Royal College of Surgeons, London. 8vo. Illuſtrated with 15 plates. London, 1805.

A Reply to Mr Edlin's two Caſes of Gout. By Robert Kinglake, M. D. 2s. 6d.

Tables of the Materia Medica. By Jeremiah Kirby, M. D. &c. 8vo. Edinburgh, 1805.

A Medical and Experimental Inquiry into the origin, ſymptoms, and cure of conſtitutional Diſeaſes, particularly ſcrofula, conſumption, cancer, and gout; illuſtrated by caſes. By W. Lambe, M. D. 5s. 6d.

A General Treatiſe on Cattle; comprehending the breeding, management, improvement, and diſeaſes. By John Lawrence. 8vo. 12s.

Obſervations on ſome late Attempts to depreciate the value and efficacy of Vaccine Inoculation. By Samuel Merriman. 8vo. London, 1805.

Obſervations on the Change of Public Opinion in Religion, Politics, and Medicine; on the conduct of the war; on the prevailing diſeaſes in Great Britain; and on the medical arrangements of the army and navy. By John Miller, M. D. 2 vol. 4to. 3l. 11s. 6d. London, 1804.

Edinburgh Medical and Phyſical Dictionary. By Robert Morris, M. D. James Kendrick, Surgeon, F. L. S. and others, 2 vol. 4to. with 50 plates. London, 1805.

A Treatiſe on the Cow-pock. By Benjamin Moſeley, M. D. 8vo. 4s. London, 1805.

Obſervations on the Climate of Ireland, and reſearches concerning its nature, from very early periods to the preſent time. By William Paterſon, M. D. &c. 8vo. London.

A General Dictionary of Chemiſtry. By W. Niſbet, M. D. 8s. 6d.

Outlines of a Plan to ſtop the Progreſs of the Malignant Contagion which rages on the ſhores of the Mediterranean, if it ſhould make its way to this country. By Richard Pearſon, M. D. 8vo. 6s. 6d. London, 1804.

Dialogues in the Shades, with Preface and Poſtſcript. By W. Perry, M. D. Dedicated to medical practitioners, and to all perſons liable to fits of the gout; alſo recommended to every purchaſer of Dr Kinglake's Diſſertation on Gout, &c. &c. 8vo. London. 1804.

Volume the fifth, including the 19th Part, of the Abridgement of the Philoſophical Tranſactions of the Royal Society of London. 4to. 2l. 2s.

An Inquiry into the Efficacy of Oxygen in the cure of Syphilis; with obſervations on its application in various diſorders. By Charles Platt, Surgeon. London. 1804.

A Scriptural View of Peſtilence, particularly of that dreadful peſtilence the ſmall-pox, with conſiderations on the cow-pock, in two Sermons; the firſt preached before the Univerſity of Cambridge, on Sunday February 24.; the ſecond in the pariſh church of Hixton, on Sunday March 3. 1805; with copious notes and illuſtrations. By the Rev. James Plumptree, M. A. &c. 8vo. London. 1805.

The Twenty-fourth Report of the Society for bettering the Condition of the Poor. 1s.

A General View of the Writings of Linnæus. By Richard Pulteney, M. D. F. R. S. ſecond edition, with memoirs of the Author. 4to. 1l. 11s. 6d. boards.

An Examination of that part of the Evidence in relation to Cow-pock, which was delivered to a Committee of the Houſe of Commons by two of the Surgeons of St Thomas's Hoſpital, with remarks on inoculated ſmall-pox. By W. R. Rogers. With a coloured engraving. 2s.

Plants of the coaſt of Coromandel, from drawings and deſcriptions preſented to the Court of Directors of the Eaſt India Company. By William Roxburgh, M. D. No. 8. 1l. 1s.

An Account of Indian Serpents, publiſhed by order of the Court of Directors of the Eaſt India Company, under the ſuperintendance of Patrick Ruſſel, M. D. with plates. 2d part of vol. 1. 1l. 16s.

An Eſſay on Peſtilential Diſeaſes. By James Rymer, Surgeon, R. N.

A Report of the Progreſs of Vaccine Inoculation in Bengal. By John Shoolbred. 2s.

A Series of Eſſays introductory to the Study of Natural Hiſtory. By Jeremiah Skrimſhire, M. D. 2 vol. 12mo. 7s.

A Letter to William Wilberforce, Eſq. M. P. By James Carmichael Smyth, M. D.; containing remarks on a pamphlet, entitled, An Account of the Diſcovery of the Power of Mineral Acid Vapours to deſtroy Contagion. By John Johnſtone, M. D. Publiſhed in 1803. 8vo. London. 1805.

Medical Collections on the Effects of cold Water, as a remedy in certain diſeaſes; with an appendix, containing an account of ſome experiments made with a view to aſcertain the effects of cold water on the pulſe. By John Edmonds Stock, M. D. licentiate of the College of Phyſicians, London, Phyſician in Briſtol, &c. 8vo. London. 1805.

Obſervations on the Cow-pock, ſhowing that it originates in ſcrofulus; with caſes to prove that it is no ſecurity againſt the ſmall-pox, &c. By R. Squirrel, M. D.

Remarks on Sea-water, with obſervations on its application and effects internally and externally, as conducive to health. By Charles Taylor, M. D. Secretary to the Society for the Encouragement of Arts. 8vo. 2s. 6d. London. 1805.

Theſaurus Medicaminum. By a Member of the London College of Phyſicians, and Author of the Materia Alimentaria. Third edition. 8vo. London. 1804.

Tranſactions of the Royal Society of Edinburgh. Third and concluding part of the fifth volume. 4to. 7s. 6d. Edinburgh. 1805.

An Addreſs to the Inhabitants of all large towns recommending Vaccination. 2d.

The Report of a Medical Committee on the caſes of ſuppoſed ſmall-pox after vaccination, which occurred in Fulwood's Rents, Holborn, in Auguſt and September 1804. 8vo. 1s. London. 1804.

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TO CORRESPONDENTS.

Several valuable Communications arrived too late for insertion in this Number. They should, if possible, be sent a month or six weeks previous to the day of publication, addressed to Mess. Constable & Co. Booksellers, Edinburgh; Longman, Hurst, Rees, & Orme, London; or Gilbert & Hodges, Dublin.—We do not think proper at present to reprint the Letters on the Cambridge Degrees; but we consider ourselves personally obliged for the information conveyed in them, and request that we may be allowed to keep the originals.

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